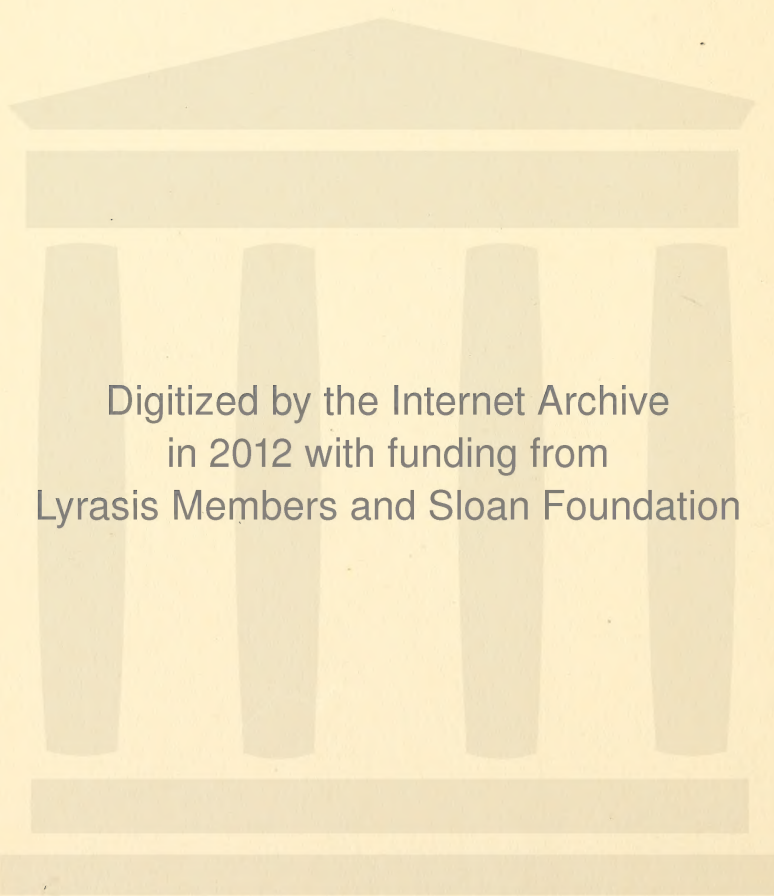




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BLINDNESS AND THE BLIND
IN THE UNITED STATES



THE NATIONAL ASSOCIATION OF THE BLIND
INCORPORATED IN THE DISTRICT OF COLUMBIA
OFFICE: 1500 K STREET, N.W., WASHINGTON, D.C. 20005
TELEPHONE: (202) 546-1100

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THE NATIONAL ASSOCIATION OF THE BLIND



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BLINDNESS AND THE BLIND IN THE UNITED STATES

BY
HARRY BEST

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TO
THOSE BEARING THE HEAVIEST OF HUMAN SORROWS
BUT IN WHOSE SOULS THERE SHINETH AN EVERLASTING LIGHT
AND
TO THOSE WHO LABOR FOR THEM
WITH INFINITE COURAGE AND FAITHFULNESS

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This volume is published by way of celebration of the centennial of the beginning of organized work for the blind in the United States. It is made possible through the concern of the three oldest schools, all established near the same time (1832 and 1833)—the New York Institute for the Education of the Blind, the Perkins Institution and Massachusetts School for the Blind, and the Pennsylvania Institution for the Instruction of the Blind—in particular through the personal efforts of the principals of these schools, Dr. Edward M. Van Cleve, Dr. Edward E. Allen, and Dr. Olin H. Burritt. To the assistance thus provided is to be added that of the National Society for the Prevention of Blindness. For all of which there is gratitude great and imperishable.

FOREWORD

The present work is a revision and expansion of "The Blind: Their Condition and the Work Being Done for Them in the United States." Because of the greatly increased consideration of the matter of the prevention of blindness, and for other reasons, the title has been changed to the one now appearing.

In this study the field of inquiry has been limited to the United States, except in so far as an account has been necessary of certain operations in foreign countries, especially in the way of affording instruction to blind children and of devising a system of raised print, as an introduction to the work in this country. References are accordingly only to American sources, save as to a restricted number of publications in England dealing with various matters. (References are in general given in simple, possibly abbreviated, form. Reprints of articles in periodicals are not as a rule separately indicated. References to newspaper articles or accounts have had to be omitted altogether.)

For all that has been set down the writer must alone accept the responsibility. For generous assistance, however, in the reading of a greater or less part of the manuscript or proofsheets there are to be mentioned in particular: Dr. Lewis H. Carris, Dr. B. Franklin Royer, and Miss C. Edith Kerby, of the National Society for the Prevention of Blindness; Mr. Robert B. Irwin, Miss Evelyn C. McKay, Miss Helga Lende, and Mr. Eben N. Palmer, of the American Foundation for the Blind; Miss Katherine E. Maxfield and Miss Mary E. Sawyer, of Perkins Institution; Miss Lucille Goldthwaite, of the Department for the Blind of the New York Public Library; Mr. Walter G. Holmes, editor of *The Matilda Ziegler Magazine for the Blind*; Mr. Charles F. F. Campbell, of the Detroit Bureau for the Handicapped; Mr. George F. Meyer, Supervisor of Classes for the Blind of the Minneapolis Public Schools; Miss Grace S. Harper, of the New York State Commission for the Blind; Mrs. Mary Dranga Campbell, Director of the Work for the Handicapped of the Brooklyn Bureau of Charities; Mr. Calvin S. Glover, Executive Secretary of the Cincinnati Association for the Welfare of the Blind; Mr. Bennet Mead, formerly of the United States Census Bureau; Dr. Samuel P. Hayes, of Mount Holyoke College; Miss Linda Neville, formerly member of the Kentucky Board of Charities and Correction; Dr. F. Park Lewis, of Buf-

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INTRODUCTION

Of the blind much has been written. Their misfortunes and their sorrows, their struggles and their attainments, their fortitude and their heroism, have all received commentary. At the story of those that sit in darkness, of the lot which they endure, and of the things which they have overcome, a sigh of compassion has arisen to many a lip, a tear of sympathy to many an eye, a glow of admiring pride to many a cheek. It is perhaps well that this should be. The deprivation entailed in the loss of sight is verily a grievous one—one to which mayhap none other befalling the sons of men is to be likened. That commiseration for the state of the blind should so widely be evoked in the breasts of their fellow creatures is a tribute to the great heart of humanity.

Yet praiseworthy as are the aims of many of the accounts of the blind, the nature of these accounts remains largely one of sentiment. The condition and the problems of the blind portion of the human race have in the main received notice as matters of "human interest," and the points which have in the greatest degree been chosen for attention are those which might heighten this feature. Concern in the blind that is based upon their actual position in society and the treatment which they have received from it, purely as a matter of scientific inquiry—though in no wise removed from a profound human love, and indeed wrapped about therewith—has been of secondary moment. In other words, an examination of the blind and of their estate from the point of view of the social economist—the presentation of something of what has come to be known as a "social survey" respecting them—has as a comprehensive study been wanting.

The object of the present work is to consider the blind, as respects the United States, with this latter conception in mind. While great would be our disappointment if there were not found in what we shall relate an abundance of "human interest," it is not in such primarily that we are to concern ourselves. Nor is our approach to the problems of the blind to be by any of the special paths of education, of medicine, or of law, though all these aspects will have to be touched upon. Nor yet again is our task that of dealing with this class as a problem of psychology, or of any particular form of abnormality, though more or less consideration will have to be given to these matters.

Rather, we are to regard the blind as certain components of the

population of the state who demand classification and attention in its machinery of organization. We are to examine the various problems that are raised by the presence in the body politic of a group of persons known as the blind, and the several measures that have been put forth to deal with the problems thus brought to view. In this way we shall aim to discover the attitude of society or of the state towards the blind, together with the duties which have been recognized with respect to them, and the extent and the form, as well as the adequacy and the correctness, of the treatment accorded to them.

The attitude of society towards the blind has hitherto, as we have intimated, been chiefly one of compassion; and because of this they have largely been thought of in a sentimental way. As we proceed to inquire into the provisions that have been made for the blind in the past, we shall find that in the main these have been limited to two forms—the supplying of the means of education for blind children, and the more or less indiscriminate giving of alms or similar doles to such of the blind as have crossed our paths. The measures for the instruction of blind children have as a general thing been the sole organized proceeding attempted for the blind. Direct public care has mostly been limited to the creation and maintenance of schools, and attention has not often advanced further.

Such a policy has in effect amounted to allowing the blind, after their departure from the schools, as well as those others whose blindness has come after the period of youth, to shift for themselves, with little or no aid or direction from outside. The result has not always been well. Not only has it proved that those persons who lose sight in early years are at peculiar disadvantage in the work of the world in later years, but also that those to whom blindness comes in adult life are called upon to face a condition hardly less difficult. In all too many cases the want of sight creates a situation beyond the power of the blind to meet, and in numbers they unwillingly drift into a state of dependence. Thus in the race of life, unless special provision is undertaken, a large portion are doomed to distress and want—even though there are at times among them souls so great that the clouds of misfortune are pierced through.

All this has been realized, in howsoever small a degree, during the entire period of work for the blind in America; and from time to time, practically from the beginning, the question of larger provision has received consideration. With the situation just recounted there has never been any general satisfaction; and here and there it has been sought to reach the adult blind in some effective manner, no less than

blind children in their schools. But, as a usual thing, when an attempt to do more for the blind has been made, it has been piece-meal, as it were, and limited either in scope or in locality. Growth of interest in the blind of a really general character has been gradual; and proceeding from what has appeared to be the simplest action, has often followed rather clearly defined lines. Beginning with the schools for the education of the young, together with some form or other of material relief in diverse cases, and as a natural result of the educational provision in the preparation of reading matter for the special benefit of the blind, the movement after a time is extended to afford public library facilities for the blind, with perhaps the distribution in some measure of reading matter in the home. As a development of the latter activity, actual teaching of various kinds is introduced into the homes for the benefit of the grown-up blind. Paralleling all such provision of an intellectual nature, though in point of time not infrequently preceding it, comes assistance of a more substantial character, in the creation of a few small industrial establishments, perhaps as an extension of the work of the schools, and sometimes begun very early in their history, while the general question of industrial employment for the blind receives greater and greater attention. Inquiry becomes particularly directed to the possibilities of the creation of industrial centers or establishments in which employment may on a considerable scale be provided for those of the blind who are able to work, thus affording them occupation and giving them an opportunity to become wage-earners to a greater or less extent. In the meantime special homes for the aged blind appear in this or that place, furnishing a retreat for a limited portion of the blind population; and later are added homes for the care of very young blind children. As a last resort, for the assistance of those among the blind for whom no other satisfactory or adequate treatment seems available, a system of pensions or similar aid is introduced, which will render material relief in a regulated manner. Here there is found to be opened up a vast field of inquiry as to the ultimate form of relief to be held out to the blind.

As a directing force in some of the beneficial activities initiated, and sometimes with a particular sphere of operations outlined, there are organized special associations or societies composed of persons in private life, which are concerned in the welfare of the blind in different ways. In part from the example set by these bodies, and as the final development in a comprehensive scheme of work for the blind, emerge public commissions or other public agencies created directly by the state, which make manifest its interest in their problems and its con-

viction that it has a real duty to perform with respect to them. Both the private societies and the public commissions adopt programs containing various measures designed to assist and direct the blind in not a few capacities, which usually begin with the maintenance of individual records, and which may in the end come to have an extended range.

During all these different steps a question has presented itself with more and more frequency and insistence. This is whether, after all, blindness should itself be accepted as a settled condition with us. With increasing emphasis and directness, and in all seriousness, we are asking ourselves whether a considerable part at least of this affliction might not have been prevented. So decidedly has interest turned to this phase of the work in respect to the blind that it may be said today to be the subject of chief attention therein. The result is that vigorous measures are being laid hold of to bring about the elimination of blindness so far as this may be humanly possible.

The activities which we have now related may be divided into five groups: (1) educational, including the establishment and maintenance of schools for blind children, and intellectual provision of several kinds for blind adults; (2) eleemosynary, including the creation of homes for the care of the blind, both adults and children, and the adoption of a general pension system or other system of relief; (3) industrial, consisting of various measures designed to give the blind employment; (4) directive, including the work of associations and commissions for the blind; and (5) preventive, consisting of operations to prevent blindness.

Such constitutes what may be regarded as a fairly complete outline of work for the blind, so far as it is in evidence in America today. In it the thing of greatest value, next after the matter of the prevention of blindness itself, may be said to lie in the understanding of the fact that there are, not one, but several classes of the blind to be dealt with, each of which requires special and appropriate attention.

The possibilities of a definite and comprehensive program for the blind have been tardily seen, and its general adoption but begun. Only in a comparatively few localities have efforts been put forth to provide for all the blind according to their several needs. A general program is, therefore, to be considered for the present as rather an ideal or standard. In the following pages, it will be our purpose, from a study of the various activities already brought into being, to ascertain how far this seems actually to have been realized.

The better to study the several forms of work for the blind now engaged in, we shall divide our theme into seven parts.

In Part I we shall consider the possibilities of the prevention of blindness—the object of foremost concern in the discussion of the problems presented by the blind. This will involve a careful examination of the causes of blindness, and the proportion found to be preventable by present known means; of the effects of heredity upon blindness, with consideration of possible action on the part of society in this regard; of the extent that blindness from certain diseases may be arrested, with the measures that may be and have been put forward to this end; of the extent that blindness from accidents and injuries to the eye may be checked, with the measures that may be and have been put forward to this end; of the matter of impaired vision short of blindness; of the question whether or not the number of the blind is tending to gain at present in relation to the general population, or whether blindness may be regarded as an increasing or a decreasing phenomenon in society—perhaps, from our point of view, to be regarded as the most important of all the questions for which we are called upon to find answer; and, finally, of the organized movements which have been set on foot toward the prevention of blindness—a matter of the highest significance.

In Part II we shall seek to obtain a general view of the blind. First, we shall determine who are meant by “the blind,” and how many of them there are in the United States, together with other particulars regarding them as a class—such as sex, race and nativity, age, age at occurrence of blindness, general health and physical and mental condition, education, and marital condition. Our attention will next be devoted to their accustomed position in society, considered from several different aspects—which will include their economic condition, with special examination of the proportion discovered to be self-sustaining, and of the means from which their general support is derived; their legal status, or the attitude of the law to them, with the extent to which it has given special concern to them; their place in popular conceptions, with the extent to which justification therefor exists in fact; and the cost of blindness, including that to the individual and that to the state or to the public.

In Part III we shall consider the provisions which have been made for the education of blind children, these being, as we have observed, the initial form of public treatment which the blind have received, and the one of the greatest extent. First, we shall briefly record the earliest attempts at instruction in the Old World, culminating in the founding of schools. Thence we shall follow the transition of the work to America and its development here. We shall consider the establishment of the early schools, and shall watch the spread of instruction

over the country, noting how the first movements were those of private initiative, which in time were seconded or taken over by the state. In determining how far the state has seen and has performed its duty in respect to the education of the blind, we shall find that provision has been made in all the States, most having created special institutions for the purpose. We shall examine the organization of these institutions, and also the general arrangements in effect in the several States. The development of the work in later years includes a system of day schools in certain centers (besides a few schools in private hands), to which due attention will have to be given, as well as to the measures contemplated or attempted for the higher education of the blind. Following this we shall consider how each State has been found individually to provide for the instruction of the blind, observing also the extent to which the States have seen fit to refer in their Constitutions to the schools, and the extent to which the schools are regarded as purely educational. We shall then proceed to inquire into the terms and regulations of admission of pupils into the schools; and we shall make particular investigation with regard to how far the educational opportunities of the state are being availed of, which will include the extent of education among blind children, and the measures demanded to make its offer of full effect. The strictly educational problems of the blind are not within the province of our study, but to the forms of instruction afforded in the schools summary reference may be made. Finally, we shall mark what is the cost to the state of all this activity for the education of the blind, noting also how far assistance in the work has been rendered by private benevolence.

In Part IV we shall pass from the consideration of intellectual provision for blind children to the consideration of that for the adult blind, or of that which is not confined exclusively to schools. As an introduction, we shall take note of the means employed to enable the blind to do their reading, making proper inquiry into the development of systems of raised print, and with examination of the methods now in use, as well as of the extent of the ability of the blind generally to read such print. The special provision, as a result of the utilization of this type, assumes, we shall discover, three forms, each of which will be duly presented: the preparation of matter in raised print; the distribution of such matter, especially by means of libraries; and the carrying of instruction into the homes of the blind, known as home teaching—which may include instruction not only of an intellectual nature, but of other kinds as well.

In Part V our concern is shifted to the material provisions which have been made for the blind. These may be regarded as of several

possible kinds. First, we shall consider special homes for the blind, such consisting, on the one hand, of homes for the infirm blind of adult life, and, on the other hand, of homes for very young blind children; and we shall see how far they may be and have been provided to meet the situation—with a glance at the same time at the general treatment to be accorded the latter class. Next, we shall deal with the question of special industrial establishments and see what they have to offer as a means of betterment of the condition of the blind. This inquiry will involve, on the one hand, consideration of the workshop plan in its several aspects from the theoretical point of view, and, on the other hand, examination of the actual working out in practice of the shops so far established, in which we shall trace their developments to this time and shall analyze their present organization and results. Like attention will have to be given to all other possible forms of industrial provision for the blind—that is to say, in the general industrial ranks of the community, or in the occupations engaged in by those who see. Then, we shall pass under review the plan of pensions for the blind, noting its significance and possibilities, and the extent to which it has thus far been developed; and shall endeavor to determine in what degree this arrangement may be accepted as satisfactorily answering the wants of that portion of the blind for which no other program appears available. Recognizing, however, the imperfections of any pension system, we have one other plan for the rendering of material relief to the blind. This is in the way of indemnification for the loss of sight, which is called into play at and because of such occurrence. Though application of the principle on any considerable scale is reserved largely for the future, it may be regarded not only as affording a most satisfactory substitute for the pension arrangement and a very great improvement over it, but as offering what is in many respects the ideal solution of the problem. A further consideration, and the one of the really highest value, is that in this way a premium is put upon the protection of the sight. Three general forms of indemnification for the loss of vision are found to present themselves, each of which will have to have due attention: through suits at law against the party responsible for the injury; through personal insurance, or through insurance policies; and through public or publicly directed measures of some kind, one of which is known as the workingmen's compensation laws, such being the first extension of public concern to the matter.

In Part VI we shall direct our attention to the organizations which have been established to promote the general welfare of the blind. These we shall find to be of two kinds: private associations and public

commissions. The fields open to each of them, and their respective activities, will constitute the subject of our inquiry here.

In Part VII, our final division, we shall review the work for the blind as a whole in the United States, and shall set down the conclusions at which we may have arrived respecting it.

PART I

BLINDNESS AND POSSIBILITIES OF ITS PREVENTION

CHAPTER I

CAUSES OF BLINDNESS AND EXTENT OF ITS POSSIBLE PREVENTION ¹

STRUCTURE OF HUMAN EYE

The visual apparatus in man, or the mechanism by means of which sight is enjoyed, is of a very delicate and complicated order. The human eye is composed of coördinated parts, lesion or injury or weakening of any of which may impair the proper functioning of the organ as a whole, perhaps leading to the destruction of the sight in it, or to blindness. The eye contains various substances—membranes, muscles, blood vessels, nerves, etc.—all acting together with respect to the light entering it.

The eyeball or globe is a movable, almost spherical mass, rather of ovoid shape, lying in the eye cavity of the skull. It is held in place by muscles (with connection also with the nerves, and with the eyelids). Its external surface in front is incased in a membrane known as the conjunctiva, really a mucous covering, and rather an appendage to the eye itself. The eye has several distinct coats about it. The outer one consists of the sclera or sclerotic coat, or “white” of the eye, opaque and of rather tough texture, which serves as a protective device, and to which the muscles are attached. Implanted in the sclera at the front is the cornea, which is transparent. Within the sclera are two further coats or linings of the eye. The first is in three parts, known as the choroid, ciliary body, and iris, sometimes jointly called the uvea. The choroid is a membrane, dark reddish brown in color, composed chiefly of blood vessels, extending around the eye. Toward the front it becomes the ciliary body, which is of comparatively thick texture. Directly in front it is continuous with the iris, a thin diaphragm or curtain, which is perforated by a circular black hole called the pupil; it is this which gives the eye its particular color. The iris is thus immediately behind the cornea. The innermost coat of the eye is the retina, an almost transparent membrane, mostly of nervous matter, which passes well up on each side of the eye, spreading out somewhat like the flower of a tulip, and which at the back is directly connected with the optic nerve—the retina in fact being merely a sort of extension of the optic nerve. Behind the iris, and almost in contact with it, is suspended the crystalline lens (surrounded by a

¹ For definition of blindness, see Chapter VIII.

transparent membrane called the capsule). In front of the lens, just behind the cornea, lies a watery substance, known as the aqueous humor, and at the rear a semi-solid or jellylike mass known as the vitreous humor, which fills the large posterior portion (about four-fifths) of the eye. Attached to the eye, for its control, are the special eye muscles (within and without). Other appendages provided for the protection of the eye are the lachrymal apparatus (consisting of sac, gland, and duct) and the eyelids (besides the eyebrows). The inner surface of the eyelids is covered with the conjunctiva.

MEANS THROUGH WHICH BLINDNESS MAY BE OCCASIONED

The eye in all its several parts is subject to injury—to disease acting from within and to accident or other mischance acting from without. Diseases that bring on blindness are of two kinds—affections concerned with some part of the eye, the inroads of which are largely limited to the eye itself; and diseases of a more general character, which involve other parts or members of the body, especially of the head, the damage to the eye being frequently the most serious of their sequelæ. Some diseases responsible for blindness are peculiar to the eye, or are idiopathic (arising without apparent external cause). Most, however, are believed in reality to be largely expressions of more general maladies or ailments in the human system, the primary or underlying cause having its seat elsewhere, with developments more or less rapid reaching the eye. In other words, eye troubles are in large part not inherent in the eye itself, but are rather sympathetic or reflective of more far-extended troubles. The eye often suffers because some other part of the body is out of order.¹

Blindness is associated with various general complaints. Disorders of the blood or the circulatory system, of the brain or nervous system, of the digestive system, of the muscular system, of the nose and throat, of the ductless glands, may all have ocular manifestations or ocular complications. Through toxic processes the proper nutrition of the eye may be interfered with or other disturbance induced. Inflammations may be set up in the eye, especially in the nerves or muscles. Certain zymotic, or infectious or contagious, diseases, perhaps from focal infections nearby or elsewhere, may carry their sub-

¹ In the consideration of the causation of blindness not to be overlooked or neglected are various social factors, including general accessibility of medical and surgical treatment (especially of a skilled nature), together with hospital facilities; general industrial conditions, together with general industrial processes; possibilities of spread of infectious diseases; general unhygienic conditions of living; malnutrition and other adverse conditions affecting general health; extent of medical supervision of schools; extent of community nursing service; regulation of practice of physicians, midwives, etc.; general development of ophthalmic science; etc.

versive operations to the regions of the eye, with results perhaps of aggravated character when such diseases are also exanthematic or eruptive in their nature (in particular, diseases on the order of scarlet fever, typhoid fever, measles, meningitis, diphtheria, influenza, malaria, scrofula, smallpox, tuberculosis, catarrh, and certain "fevers"). Such diseases are especially characteristic of early life. Sometimes there may exist affections of the eye with complications of one kind or another. Not infrequently with the advance of the years, and with general physical degenerative processes, there is to be expected weakened vision, perhaps amounting to blindness, especially through progressive opacity of some part.

External injuries from accidents or from some force operating from without may be said to cause blindness when any necessary part of the visual apparatus, including the optic nerve, is shattered or deranged or otherwise damaged to such an extent that its effective functioning ceases. Destruction of the sight through such means may be direct and immediate; or it may be indirect and of more or less gradual approach, following infection or inflammation or other injury which has itself been occasioned by some force acting from without. In a large sense, then, accidents include such externally induced agencies as poisoning, foreign substances in the eye, exposure to heat, strained eyes, etc. To a certain extent, also, these may be regarded as embracing occupational disease or as resulting from industrial surroundings. In particular, from poisoning there may be set up toxic irritation of the mucous membrane of the eye, especially of the conjunctiva, while in certain cases there may be toxic effects with the retina or optic nerve. Some portion of blindness, furthermore, is due to structural defects of the eye or malformations, for the most part existing from birth.

Most blindness reported as congenital, or as existing from birth, is really ascribable to some disease operating at birth or shortly thereafter. Possibly a small part of congenital blindness is in fact due to antenatal conditions. A certain amount is of hereditary origin of the exact nature of which little has as yet been learned. Some congenital blindness, unrelated to any specific disease, is probably the result of arrested development in some part of the ocular system or of malformations therein.

It is to be kept in mind that cases of blindness in general are due, on the one hand, to a specific affection of the eye, which is directly responsible for the blindness, and, on the other hand, to certain etiological factors, which are in themselves responsible for the eye affection.¹

¹ A suggested classification of the causes of blindness, with emphasis rather upon underlying etiological factors, is as follows: (1) congenital and hereditary blindness (other than

GENERAL CAUSES OF BLINDNESS

In the following table is given the percentage distribution of the blind according to different reported causes (1920).¹

syphilitic)—cataract, malformations and anomalies (anophthalmus, microphthalmus, megalophthalmus, aniridia, albinism, dislocated lens, etc.), optic atrophy, retinitis pigmentosa, etc.; (2) blindness from trauma (including eye infections following injury and sympathetic ophthalmia)—industrial injuries (including industrial poisonings and burns), non-industrial injuries (war, fireworks or firearms or percussion caps, play or sport, household activities, street accidents, accidents of surgical operation, etc.); (3) toxic amblyopias (excluding industrial poisoning)—amaurosis from tobacco, amaurosis from alcohol (ethyl, methyl), etc.; (4) blindness consequent upon general infectious diseases—syphilis (congenital, acquired), tuberculosis, cerebrospinal meningitis, measles, typhoid fever, scarlatina, smallpox, diphtheria, pneumonia and influenza, eczema, etc.; (5) blindness chargeable to systemic diseases (excluding infectious diseases)—diabetes, nephritis and other kidney diseases, arteriosclerosis, multiple sclerosis, metabolic imbalance, etc.; (6) blindness chargeable to acute eye diseases—ophthalmia neonatorum (gonorrhea, etc.), purulent conjunctivitis (gonorrhea, blennorrhea, etc.), etc.; (7) blindness due to idiopathic and chronic eye diseases (and not elsewhere specified)—glaucoma (acute, simple, etc.), diseases of conjunctiva (trachoma, etc.), diseases of cornea (interstitial keratitis, kerato-conjunctivitis, phlyctenular, ulcers, etc.), diseases of iris and ciliary body (iridocyclitis, iritis, iris bombé, etc.), diseases of crystalline lens (cataract, dislocated lens, etc.), diseases of choroid and retina (detachment of retina, retinal hemorrhage, disseminated chorioretinitis, etc.), atrophic and neuritic diseases (optic atrophy, optic neuritis, neuroretinitis, etc.), degenerative changes (retinitis pigmentosa, phthisis bulbi, atrophic globe, etc.), neoplasms (intra-cranial, extracranial) (benign, malignant), errors of refraction and motor anomalies (progressive myopia, high hypermetropia, amblyopia ex anopsia, astigmatism, etc.), amblyopia, intraocular hemorrhage, etc. See *Outlook for Blind*, xxv., 1931, p. 161. There has also been proposed the following classification of the causes of blindness, which indicates, on the one hand, the underlying factors responsible for the affection of the eye (etiological), and, on the other hand, the seat of the trouble, or the part of the eye affected (topographical). *Etiological*. Infectious diseases: diphtheria; gonorrhea; measles; meningitis; ophthalmia neonatorum (gonorrheal, pneumococcic, other types); scarlet fever; septicemia (acute, chronic—including autotoxemia, focal sepsis, etc.); smallpox; syphilis (congenital, acquired); trachoma; tuberculosis; typhoid fever; other infections. Traumatic and chemical injuries (including infections following injury and sympathetic ophthalmia): non-industrial injuries—war, explosives (fireworks, firearms, other explosives), play or sport, household activities, street and traffic accidents, injuries incidental to surgical pro-

¹ The statistics in this chapter are, unless otherwise indicated, taken from reports of the United States Census Bureau—"The Blind Population of the United States: 1910," 1917; "The Blind in the United States: 1910," 1918; "The Blind in the United States: 1920," 1923; "The Blind Population of the United States: 1920," 1928. The former relate to 29,242 blind persons making special report, and the latter to 40,913 (of whom 5125, or 12.5, per cent give no cause or give the cause as unknown). These returns are not to be expected to possess entire accuracy. In a number of cases it is difficult to determine the exact cause of blindness. There may often be limited medical or specialized examination or diagnosis. At the same time the very complexity of the organism concerned and the obscurity of the disorder affecting it not seldom preclude the discovery of the precise trouble. In some instances it is far from easy to ascertain whether the blindness is "congenital" or not, while several of the main causes, especially cataract, retinitis pigmentosa, and others, to a greater or less extent of hereditary character, may not be operative till the elapse of a considerable period of time. It is also to be remembered that the statistics indicate only the number of those living at the time who have become blind from the causes mentioned, and do not indicate the number becoming blind in a given period, so that causes operative in the earlier years of life are a trifle exaggerated. As there is a relatively greater proportion of reports from younger blind persons, the proportions for diseases of infancy and childhood are correspondingly increased. It is further likely that certain diseases not generally known to the lay public, such as disorders of the retina, iris, and choroid, are not sufficiently represented in the returns. Statistical knowledge regarding the causation of blindness would be greatly advanced if a registration could be kept of all persons becoming blind during a given year, with the cause assigned for each.

CAUSES OF BLINDNESS

7

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS

<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>	<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>
All causes.....	100.0	Diseases of choroid.....	0.2
I.—Disease.....	54.4	Glaucoma.....	5.4
A.—Specific affection of eye	38.6	Diseases of retina.....	1.4
Diseases of conjunctiva.....	6.1	Retinitis pigmentosa.....	0.1
Trachoma (granular eyelids)...	1.6	Retinitis hemorrhagica.....	0.3
Ophthalmia neonatorum.....	3.3	All other retinitis.....	0.3
Gonococcus conjunctivitis (exclusive of ophthalmia neonatorum).....	0.1	Detachment of retina.....	0.5
All other ophthalmia and ophthalmia not specified....	1.0	All other.....	0.2
All other.....	0.1	Diseases of optic nerve.....	6.9
Diseases of cornea.....	1.2	Atrophy of optic nerve.....	4.9
Corneal ulcer.....	0.7	All other.....	2.0
Staphyloma.....	0.1	Diseases of crystalline lens.....	13.7
Keratitis (not otherwise specified).....	0.3	Cataract.....	13.7
Corneal opacities.....	0.1	All other.....	....
All other.....	...	Amaurosis and other disturbances of vision.....	0.2
Diseases of iris.....	0.7	Progressive myopia.....	0.3
Iritis (not otherwise specified).....	0.6	Cancer and other neoplasms....	0.7
All other.....	0.1	Neoplasms of eyeball.....	0.3
		Neoplasms other than of eyeball.....	0.3
		Buphthalmos, hydrophthalmia, microphthalmia.....	0.1
		All other diseases of eye.....	0.4
		Combination of two or more diseases of eye.....	1.3

cedures, birth injuries, other non-industrial injuries; industrial injuries and diseases—trauma (including burns), industrial diseases (including industrial poisoning), other industrial injuries. Toxic poisoning: tobacco; alcohol (ethyl, grain); alcohol (methyl, wood, etc.); other toxic poisonings. Neoplasms (benign, malignant). Non-infectious systemic diseases: anemia and other blood diseases; diabetes; nephritis and other kidney diseases; vascular diseases (including arteriosclerosis and other cerebral-vascular lesions); non-infectious diseases of central nervous system (including multiple sclerosis); diseases connected with disorders of pregnancy and childbirth); other systemic diseases. Congenital and hereditary (other than syphilitic): congenital; hereditary. Etiology undetermined. *Topographical.* Eyeball: hypertension (glaucoma); refractive errors—myopia, other refractive errors; motor anomalies—amblyopia ex anopsia, other motor anomalies; developmental anomalies and degenerative changes—albinism, anophthalmus, megalophthalmos, microphthalmos, atrophic globe, phthisis bulbi, other developmental anomalies and degenerative changes; other affections of eyeball. Conjunctiva: conjunctivitis; other affections of conjunctiva. Cornea: interstitial keratitis; kerato-conjunctivitis; phlyctenular (eczematous); keratitis unspecified; ulcers; other affections of cornea. Iris and ciliary body: aniridia; iridocyclitis; iritis; other affections of iris and ciliary body. Crystalline lens: lens opacity (cataract); dislocated lens; other affections of crystalline lens. Choroid and retina: choroiditis; retinitis; disseminated chorioretinitis; detached retina; retinal hemorrhage; retinitis pigmentosa; obstructions of central artery or vein; other affections of choroid and retina. Optic nerve: optic atrophy; optic neuritis; neuroretinitis; other affections of optic nerve. Vitreous humor: intraocular hemorrhage; opacities; other affections of vitreous humor. Miscellaneous and ill-defined: amblyopia, undefined; other miscellaneous and ill-defined lesions. The latter classification has been adopted (at least tentatively) by the Committee on Statistics on the Blind, under the auspices of the American Foundation for the Blind and the National Society for the Prevention of Blindness. See *ibid.*, xxvii., 1933, p. 73. See also Transactions of Ophthalmological Society of United Kingdom, 1932, p. 282.

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS—*Continued*

<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>	<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>
B.—General disease.....	15.7	By machines.....	...
Measles.....	2.2	From other definitely reported causes.....	1.4
Meningitis.....	1.5	From causes not definitely reported.....	0.6
Scarlet fever.....	1.2	From combination of causes.....	0.3
Diseases of head other than meningitis.....	1.1	Not directly affecting eye..	1.4
Influenza (grippe).....	0.8	From blows to head.....	0.4
Typhoid fever.....	0.7	From falls.....	0.4
Smallpox.....	0.7	From firearms.....	0.1
Rheumatism.....	0.5	From unfortunate results of operations.....	0.1
Syphilis.....	0.5	By animals.....	0.1
Other acute eruptions of skin.....	0.5	From cutting or piercing instruments.....	...
Kidney diseases (not otherwise specified).....	0.4	From other definitely reported causes.....	0.1
Spinal trouble (not otherwise specified).....	0.4	From causes not definitely reported.....	0.2
Diabetes.....	0.3	Part affected uncertain....	6.3
Puerperal fever.....	0.2	From firearms.....	0.9
Bright's disease.....	0.2	From falls.....	0.6
Locomotor ataxia.....	0.2	In mines or quarries.....	0.2
Diphtheria.....	0.1	From unfortunate results of operations.....	0.2
Tuberculosis.....	...	By animals.....	0.2
All other diseases, not specific affections of eye.....	3.7	By machines.....	0.1
Combination of two or more diseases.....	0.6	From other definitely reported causes.....	0.8
C.—Specific affection of eye for one eye, general disease for other....	0.1	From causes not definitely reported.....	3.2
II.—Accident or other injury (including sympathetic ophthalmia).....	16.5	From combination of classes of causes.....	...
Directly affecting eye.....	8.8	III.—Other definitely reported causes....	2.6
From explosives:		Poisoning.....	0.9
Of dynamite, gunpowder, etc....	2.2	Alcoholic poisoning (other than wood alcohol).....	0.1
Of nature not stated.....	0.3	Tobacco poisoning.....	0.1
Of other kinds.....	0.5	Wood alcohol poisoning.....	0.1
From flying objects other than in explosions.....	1.1	Chronic lead poisoning.....	0.1
From cutting or piercing instruments.....	0.9	Other chronic occupational poisoning.....	...
From firearms.....	0.7	All other.....	0.5
From burns.....	0.3	Malformations.....	0.4
From falls.....	0.2	Of crystalline lens.....	...
From unfortunate results of operations.....	0.1	Albinism.....	0.1
By animals.....	0.1	All other.....	0.3
From electricity.....	...		

CAUSES OF BLINDNESS

9

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS—Continued

<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>	<i>Cause of Blindness</i>	<i>Per Cent Distribution</i>
Foreign substances in eye.....	1.2	Strained eyes.....	0.6
Acids and other substances of chemically destructive nature.....	0.7	Military service.....	0.6
Dust and other foreign particles.....	0.5	Medical malpractice.....	0.6
All other definitely reported causes.....	0.1	Scrofula.....	0.6
IV.—Causes indefinitely or inaccurately reported.....	25.5	Paralysis.....	0.5
		Wrong medicine or treatment..	0.5
		Colds.....	0.4
		Catarrh.....	0.3
		Change of life (menopause)....	0.3
		Malaria.....	0.1
		Electric light.....	0.1
		Exposure to cold.....	0.1
		All other causes indefinitely or inaccurately reported.....	6.8
		V.—Combination of different classes of causes.....	0.9
Congenital (cause not stated)...	7.4		
Old age.....	2.2		
Neuralgia.....	1.5		
Exposure to heat.....	1.4		
Sore eyes.....	1.4		

Somewhat over one-half (54.4 per cent) of all blindness is indicated as due to disease. The proportion caused by disease is actually larger—possibly not less than three-fourths—much of the blindness tabulated, through lack of fuller information, under “causes indefinitely or inaccurately reported” having its origin in disease of one kind or another.

Of the blindness occasioned by disease, seven-tenths (70.9 per cent) (equivalent to 38.6 per cent of the total for all causes) is charged to some specific disease of the eye; and three-tenths (28.9 per cent) (representing 15.7 per cent of the total), to some general disease, or a disease other than a specific affection of the eye (there being a very small proportion with blindness in one eye assigned to a specific affection and blindness in the other to a general disease).

Practically one-sixth (16.5 per cent) of the total amount of blindness is reported as caused by accidents (including sympathetic ophthalmia). To external forces in general, or causes other than disease, including in addition to accidents so called other definite causes, as poisoning, malformations, and foreign substances in the eye, is due almost one-fifth (19.1 per cent). With the inclusion of a limited proportion of the causes inaccurately or indefinitely stated, the actual proportion for accidents or external forces would be somewhat increased.¹ There

¹ The figures for blindness from accidents may possibly be slightly exaggerated, this form of blindness being the more apparent, and the real or underlying factors involved being sometimes a disease or a general state of debility of the eye not so readily recognized.

are set down to indefinitely or inaccurately reported causes one-fourth (25.5 per cent) of the total.¹

Of specific affections of the eye, those involving diseases of the crystalline lens rank first, slightly over one-eighth (13.7 per cent) of all blindness being attributable thereto. The one disease responsible for this high proportion is cataract (both senile and other), or opacity of the lens, a diathetic disorder, often of degenerative character, perhaps of progressive character, which covers virtually all of such kinds of blindness. The proportion for cataract is in fact understated; not a little of the blindness charged to old age is caused by it, as well as other blindness indefinitely or inaccurately reported (especially exposure to heat, one form of which is known as "glass-worker's cataract"),² and possibly some ascribed to such general diseases as rheumatism and diabetes.

The next largest class of diseases producing blindness is that of diseases of the optic nerve, with 6.9 per cent chargeable to it. The chief specific disorder here is atrophy of the optic nerve, which forms two-thirds of this class of blindness (representing 4.9 per cent of all).³ The proportion is really larger than indicated by these figures, much of the blindness assigned to meningitis and other exanthematic diseases and to rheumatism and other general diseases (as arteriosclerosis and certain digestive complaints), and a certain part of that laid indirectly to accidents, being little else than diseases of the optic nerve.

Diseases of the conjunctiva rank not far behind, with a proportion of 6.1 per cent. Probably some of the blindness attributed to the exanthematic diseases (and to certain general diseases) should be included here. Over one-half (3.3 per cent of all) of conjunctival disorders is ascribable to ophthalmia neonatorum, or inflammation of the eyes of the newborn, and one-fourth (1.6 per cent of all) to trachoma, or granular lids.⁴ The proportion for trachoma is doubtless somewhat larger than reported, it being the actual cause of most of the blindness charged to "sore eyes." (Blindness reported as due to "sore eyes" occurring at or shortly after birth is generally listed

¹ In the census of 1900 the causes of blindness were classified according to the part of the eye affected. To opacity was attributed 52.4 per cent, 18.2 per cent being in the lens, 17.6 per cent in the cornea, and 2.0 per cent in the iris, ciliary body, and choroid; and to some affection of the nervous apparatus, 12.3 per cent, including affections of the retina, optic nerve, brain center for sight, and other parts of the receiving mechanism of the eye. The remaining causes were unclassified or unknown. Special Reports, "The Blind and the Deaf," 1906. As some disorders, as venereal disease, may involve more than one part, such a classification is rather arbitrary. See Reference Handbook of Medical Sciences, ed. 1923, ii., p. 104; iv., p. 241.

² See *Journal of Industrial Hygiene*, xiii., 1931, p. 264.

³ Optic neuritis may refer to inflammation of the optic nerve or to inflammation in the eye in general (possibly at times from a tumor of the brain).

⁴ On ophthalmia neonatorum and trachoma, see *post*, pp. 83, 84.

under ophthalmia neonatorum.) Other ophthalmia, together with gonococcus conjunctivitis, makes up most of the remainder of the conjunctival diseases.¹

After these three classes of diseases in order of importance, there comes a single disorder, in a class by itself, glaucoma, an affection marked in its acute form by hardening of the eyeball or by intense pressure from the intraocular fluids and venous congestion, at times possibly rather a sympathetic condition than an actual disease (the determining causes of the acute form being largely unknown). The proportion ascribed to this disease is 5.4 per cent, though the actual proportion is greater, much of the blindness attributed to neuralgia, some of that attributed to old age, to rheumatism, and to diseases of the digestive system, and perhaps a portion attributed to strained eyes being really chargeable to glaucoma.

Much below these four classes of affections which produce blindness are the remaining classes of ocular diseases. To retinal diseases are due 1.4 per cent. Perhaps to this should be added a certain amount of the blindness laid to diseases of the digestive system, rheumatism, meningitis, typhoid fever, and other exanthematic diseases. Affections of the retina are of different orders, the various forms of retinitis (or inflammation of the retina), especially retinitis hemorrhagica and retinitis pigmentosa, accounting for just one-half (0.7 per cent of all blindness), and detachment of the retina accounting for one-third (0.5 per cent of all).

To corneal diseases are due 1.2 per cent; a possible addition to this is some of the blindness assigned to different infectious or exanthematic diseases, besides diabetes and rheumatism. Of affections of the cornea, corneal ulcer embraces almost two-thirds (0.7 per cent of the total); keratitis, consisting of divers forms of inflammatory disorders of the cornea, the main forms probably being phlyctenular keratitis and interstitial keratitis, embraces about one-fourth (0.3 per cent of all); and staphyloma and corneal opacities (not otherwise included) cover most of the remainder.²

To cancer and other neoplasms are ascribed 0.7 per cent, divided about equally between neoplasms of the eyeball and other neoplasms.³

To diseases of the iris are ascribed 0.7 per cent, most being chargeable to iritis, or inflammation of that part of the eye (representing

¹ Purulent conjunctivitis or blenorrrhea or "ophthalmia" may often be ophthalmia neonatorum, sometimes trachoma.

² Opacity (or greater or less cloudiness) of the cornea may follow ophthalmia neonatorum and trachoma and certain general infectious diseases. Opacity induced by friction with granular eyelids may be known as pannus.

³ Tumors may originate in the eye.

0.6 per cent of the total). The proportion here is possibly to be increased by some of the blindness attributed to certain infectious diseases and to rheumatism.¹

To progressive myopia, or progressive nearsightedness or shortsightedness, is ascribed 0.3 per cent. Some of the blindness imputed to strained eyes may be due to this affection.²

To diseases of the choroid are ascribed 0.2 per cent.³ This proportion might be added to from some of the blindness charged to certain infectious diseases.

To amaurosis (with like disturbances), usually a condition of defective vision unexplained by lesion in the eye or by refractive error, are ascribed 0.2 per cent. To buphthalmos, hydrophthalmia, and microphthalmus, all representing some abnormal condition of the eye, are ascribed 0.1 per cent.⁴ Various other diseases of the eye and combinations of two or more diseases account for 1.7 per cent of blindness.⁵

Among general diseases causing blindness, or those not originating in the eye itself, most of exanthematic character, the one easily standing foremost is measles, with one-seventh of such blindness (2.2 per cent of all) charged to it. Measles, meningitis, scarlet fever, and other diseases of the head (chiefly brain fever, brain tumor, and hydrocephalus), each responsible for not less than 1.1 per cent of all blindness, are together responsible for considerably over one-third of blindness from general diseases (equivalent to 6.0 per cent of all). These four disorders, together with influenza, typhoid fever, smallpox, rheumatism, and syphilis, none chargeable individually with less than 0.5 per cent, are chargeable jointly with three-fifths of the blindness from general diseases (equivalent to 9.2 per cent of all). The remainder is distributed among various complaints, including other acute eruptions of the skin, kidney disease, spinal trouble, diabetes, puerperal fever, Bright's disease, locomotor ataxia, diphtheria, and tuberculosis. (Arteriosclerosis and other general diseases may have some part in the causation of blindness.)⁶

¹ Disease of the iris and ciliary body may often be in combination. Inflammation of the ciliary body may be known as cyclitis. Inflammation of the iris, ciliary body, or choroid may be known as uveitis. Lack of iris is known as aniridia.

² Other affections due to errors of refraction or motor anomalies are hypermetropia, astigmatism, etc.

³ Inflammation of the choroid may be known as choroiditis. There may often be disease of the choroid in combination with the retina.

⁴ Buphthalmos in childhood is somewhat on the order of glaucoma. Absence of eye may be known as anophthalmus.

⁵ Among other affections sometimes specified as causes of blindness are toxic amblyopia, a certain poisonous condition or neuritis affecting the nerves, blood vessels, etc., possibly causing congestion; and intraocular hemorrhage.

⁶ Tuberculosis may cloud the refractive media through increase of ocular pressure or through damage to the retina, choroid, or optic nerve. Renal affections may have particular effect upon the retina.

So far as the disorder responsible for blindness may be assigned to a specific complaint of the eye, it is believed that the proportions chargeable to many of these general diseases are in greater or less degree overstated. Not a little of the blindness so designated is, as has just been found, really to be attributed to some particular eye disease, probably to a large extent to certain of the minor eye disorders which are relatively little known. It may remain true, however, that the original trouble belongs elsewhere or has larger and wider bearings. It is often to be expected, as has already been brought out, that blindness is but the after effect of one of the general affections indicated.

It may further be noted that on the whole the milder the form of attack, or the more gradual the approach, of a disorder affecting the eyesight, the less likely is total blindness to be the outcome.¹ Our knowledge is very limited as to those causes or factors which result in blindness immediately or in a short time, and those which result in blindness after a deferred period.

Venereal disease, directly or indirectly, plays a very important part in the causation of blindness, a part not fully revealed in our statistics.² The proportions definitely assigned to gonococcus conjunctivitis, syphilis, and locomotor ataxia (a disorder resulting from syphilitic infection and often accompanied by atrophy of the optic nerve) are small (0.8 per cent), but the actual proportions are doubtless considerably larger. The eye may suffer from both inherited and acquired venereal disease. Syphilis in particular is a material factor in blindness occurring in early or middle adult life, while hereditary syphilis is a no less considerable factor in blindness of infancy and childhood, and even of that coming on in later years. The operations of inherited syphilis may be slow, with blindness occurring relatively late in life. The eye at times may even be the seat of the primary sore in venereal disease. The special effects upon the eye are inflammation and wastage. Not only may different parts of the eye be involved, but its constituents—blood, membrane, tissue, nerve, etc., even including the bony structure of the eye and the muscles—may be

¹ According to the returns for 1900, the diseases which cause a greater amount of total blindness than they do of partial blindness, with the percentage of total blindness due to each, are as follows: meningitis (80.8), glaucoma (76.4), congestion or diseases of brain (73.7), scarlet fever (72.5), smallpox (71.2), venereal diseases (67.7), external injuries (66.7), neuralgia (65.5), grippe (61.5), colds (61.2), sore eyes (56.3), exposure to heat and cold (50.7), strained eyes (50.2), and cataract (50.2). The diseases causing a greater amount of partial blindness, with the percentage thereof in each case, are as follows: granulated lids, or trachoma (69.4), old age (63.4), scrofula (60.0), catarrh (55.0), measles (54.3), military service (51.1), and congenital (51.0).

² Venereal disease as a cause of blindness is most often reported by some institution in which a blind person is a patient or inmate, there being no motive in such case for concealment of true conditions.

affected. Among the various disorders of the eye for which venereal disease is responsible are several nervous and motor affections. It is said to be by far the most frequent cause of paralysis of both extra-ocular and intraocular muscles. Ophthalmia neonatorum is in the larger part due to venereal infection. Basically due to such infection also is some portion of the blindness charged to the following: conjunctivitis and other affections of the conjunctiva; atrophy of the optic nerve and other affections of the optic nerve, especially optic neuritis; corneal ulcer, keratitis, and other affections of the cornea; retinitis and other affections of the retina; iritis and choroiditis and other affections of the iris and choroid, or uveitis; besides some indefinitely reported affections, especially paralysis, and perhaps some of the blindness attributed to certain general diseases, especially rheumatism. All told, venereal disease is probably responsible, directly and indirectly, for not less than one-sixth, possibly more, of blindness, though this estimate is incapable of exact proof.¹

The proportion of accidents affecting the eye directly (8.8 per cent) is apparently almost six times the proportion affecting it indirectly (1.4 per cent). The leading single means of accidental damage to the eye is explosions, for the most part of dynamite, gunpowder, etc., occurring in mines and quarries, in construction work, or from bursting shells. To explosives is attributed directly nearly one-fifth of blindness from accidents (3.0 per cent of all). Over one-tenth of all the blindness resulting from accidents (1.7 per cent of all) is occasioned in some manner from the use of firearms. Proportions are also relatively high from falls (1.2 per cent); from flying objects, mainly small fragments of metal (1.1 per cent); and from cutting or piercing instruments (0.9 per cent). Other accidental causes of blindness reported are blows on the head, unfortunate results of operations, burns, injuries from machines, injuries by animals, electricity, injuries in mines and quarries, etc.

¹ To syphilis is charged 15 per cent of blindness. *Sight Saving Review*, Sept., 1933, p. 192. Venereal disease is said to be responsible for 85 per cent of ophthalmia neonatorum, 75 per cent of atrophy of the optic nerve, 15 per cent of uveitis, 20 per cent of microphthalmus, 75 per cent of chorioretinitis, and 100 per cent of parenchymatous keratitis. *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101. In general about three-fifths of ophthalmia neonatorum is ascribed to gonorrhea. On the amount of blindness due to venereal disease, see American Encyclopedia and Dictionary of Ophthalmology, 1917, xvi., p. 12474; Proceedings of American Health Congress, 1926, iv.; Proceedings of American Association of Workers for Blind, 1927, p. 162; Proceedings of National Conference of Social Work, 1927, p. 236; Proceedings of National Society for Prevention of Blindness, 1926, pp. 3-26; 1927, pp. 8, 12; 1928, pp. 88-118; Report of League of Red Cross Societies, "Prevention of Blindness," 1929, p. 20; *Iowa Medical Journal*, xv., 1908, p. 279; *St. Louis Medical Review*, lix., 1910, p. 37; *Archives of Ophthalmology*, xlvii., 1918, p. 455; *New Orleans Medical and Surgical Journal*, lxxx., 1927, p. 1; *Journal of Missouri State Medical Association*, xxv., 1928, p. 100; *Journal of Social Hygiene*, xiii., 1927, p. 385; xvii., 1931, pp. 151, 227; *Nation's Health*, iv., 1922, p. 26; *Welfare Magazine* (Illinois), xix., 1928, 3, June, p. 738; *Sight Saving Review*, March, 1931, p. 54; Dec., 1931, p. 48; March, 1932, p. 28.

Of other definitely reported causes (2.6 per cent of the total), the larger part are more or less akin to accidents; the most important single cause is foreign substances in the eye, which is responsible for almost one-half of this class (1.2 per cent of all). Nearly two-thirds of blindness from foreign substances in the eye results from acids and other substances of a chemically destructive nature, and over one-third comes from entry into the eye of dust and other particles. The cause with the next largest proportion is poisoning, with about one-third of this class (0.9 per cent of all). Wood alcohol is the chief offender here, being charged with about one-sixth of blindness from poisoning.¹ Other forms of poisoning resulting in blindness are general alcoholic poisoning, tobacco, chronic lead, and other occupational poisoning.²

Malformations of the eye are accountable for the remaining one-sixth of blindness from this group of causes (constituting 0.4 per cent of all).³

Under the head of causes of blindness indefinitely or inaccurately reported (25.5 per cent) are embraced a miscellaneous list, most of which, upon larger knowledge and more complete description, could find proper place under one of the foregoing definite classifications. Far to the fore among such causes is congenital blindness (so tabulated only when no specific disorder at or near birth has been disclosed in the returns). To congenital blindness (constituting 7.4 per cent of all) over one-fourth of blindness of this description is ascribed. Following in order are old age, neuralgia, exposure to heat, sore eyes, strained eyes, military service, medical malpractice, scrofula, paralysis, wrong medicine or treatment, colds, catarrh, change of life (menopause), malaria, electric light, and exposure to cold.⁴ Blindness from military service is assigned as a cause only in the absence of any specific eye trouble, much of the blindness of this nature being a result of hardships in military service.⁵ Probably, as already pointed out, a very considerable amount of the blindness alleged to be caused by old age really belongs under the head of cataract or glaucoma. Much of the

¹ On the frequency of blindness from wood alcohol, see publications of Committee for Prevention of Blindness, 1910-1917.

² Industrial poisons in particular may affect different parts of the eye.

³ Malformations or anomalies of the eye may include coloboma, anophthalmus, megalophthalmus (buphthalmos), microphthalmia, phthisis bulbi, albinism, dislocation of lens, etc.

⁴ Blindness from operations upon some part of the eye is most likely in the case of cataract and glaucoma.

⁵ During the participation of the United States in the World War in 1917 and 1918 there were as a result of direct military engagement 66 cases of loss of, or blindness in, both eyes (loss of both eyes, 14; loss of sight of both eyes, 30; amaurosis, 4; different effects in two eyes, including traumatic cataract in one, 18). There were 44 cases of amblyopia in both eyes or amblyopia in one and loss of the other. There were 644 cases of loss of one eye (or of sight in one eye). In addition, there were cases of blindness in one or both eyes or of impaired eyesight in consequence of disease among those in military service. Figures from letter from Surgeon General of United States Army. See Report of Pennsylvania In-

blindness charged to neuralgia is doubtless due to glaucoma. A certain part of the blindness attributed to exposure to heat actually has cataract as its cause. Most of the blindness laid to sore eyes is hardly other than trachoma. Possibly some portion of the blindness reported as due to strained eyes should be assigned to progressive myopia or to glaucoma.¹ A greater or less amount of the blindness attributed to the remaining indefinitely or inaccurately reported causes should be added to the proportions for different specifically designated causes.²

stitution for Blind, 1920, p. 28; 68th Cong., 1st sess., H. R. Rep. 4526, 1924, p. 4; Bulletin of United States Bureau of Labor Statistics, no. 536, 1931, pp. 296, 302.

¹ Often this is rather a symptom, the primary trouble being with some structural defect, or with the nerves, muscles, etc., or with some specific eye affection.

² Causes of blindness (with the respective percentages for each) in Minnesota (1924) are: congenital, 6.6; accidents (and sympathetic ophthalmia), 10.0; cataract, 12.0; ophthalmia neonatorum, 4.0; glaucoma, 5.1; optic atrophy, 7.3; miscellaneous, 55.0. Report of Minnesota Board of Control, 1924, p. 40. Causes in Connecticut (1930) are: accident, 19.5; cataract, 12.5; glaucoma, 9.3; optic atrophy, 4.4; miscellaneous 54.3. Report of Connecticut Board of Education of Blind, 1930, p. 30. Causes in California (1926) are: accidents, 14.0; cataract, 11.1; glaucoma, 7.5; optic atrophy, 7.5; congenital, 5.7; ophthalmia neonatorum, 2.8; other diseases, 43.6, miscellaneous; 7.0. Report of California Department of Public Welfare, 1926, p. 150. Causes in Missouri (adults) (1926) are: trachoma, 20.3; cataract, 18.0; optic atrophy, 13.0; corneal ulceration, 10.6; glaucoma, 9.5; uveitis, 5.5; trauma, 5.1; miscellaneous, 18.0. *Journal of Missouri State Medical Association*, xxiii., 1926, p. 179. See also *Archives of Ophthalmology*, lvi., 1927, p. 470; Meyer Wiener and A. M. Hayden, Study of Blind Pension Roll of Missouri, 1927. Causes in New York (1928) are: accidents, 4.8; cataract, 22.7; congenital cataract, 3.8; glaucoma, 9.0; iritis, 1.2; keratitis, 2.3; myopia, 1.8; ophthalmia neonatorum, 1.9; ophthalmia sympathetic, 4.3; optic atrophy, 11.3; retinitis pigmentosa, 1.3; detached retina, 1.2; miscellaneous, 34.4. Report of New York Commission for Blind, 1928, p. 34. Causes in Colorado (adults) (1929) are: cataract, 38.2; corneal opacities, 13.1; lesions of retina and choroid, 13.0; atrophy of optic nerve, 10.9; glaucoma, 8.1; accidents, 5.5; uveitis and allied disorders, 6.3; high myopia, 3.5; miscellaneous, 1.4. *American Journal of Ophthalmology*, xii., 1929, p. 965. Causes in Illinois (adults) (1930) are: affections of cornea, 18.8; affections of crystalline lens, 20.4; affections of uveal tract, 3.2; affections of retina, 2.0; glaucoma, 8.0; affections of optic nerve, 17.3; trauma, 11.0; post-operative, 5.3; miscellaneous, 14.0. *Ibid.*, xiv., 1931, p. 8. See also *Sight Saving Review*, Dec., 1931, p. 34. Causes of blindness among pupils in schools for the blind in the United States from 1926 to 1931 are: ophthalmia neonatorum, 17.0; trachoma, 1.4; progressive myopia, 2.0; interstitial keratitis, 3.0; phlyctenular keratitis, 0.7; atrophy of optic nerve, 14.0; accidents, 9.0; congenital cataract, 14.6; other congenital causes, 14.2; miscellaneous, 24.1. From data of National Society for Prevention of Blindness. Of blind persons related to the Federal Board for Vocational Education (1928) the percentage losing sight from industrial accidents is 12.5; from public accidents, 17.5; from disease, 36.7; congenital, 29.9; and unknown, 3.4. From data of Federal Board for Vocational Education. Of new cases of blindness referred each year (1930-1932) by the Massachusetts Eye and Ear Infirmary to the Division of the Blind of the Massachusetts Department of Education, causes are: glaucoma, 18.7; atrophy of optic nerve, 11.4; myopia (high), 11.2; diseases of choroid and retina, 11.2; corneal opacities, 6.9; separation of retina, 5.4; cataract, 4.0; vitreous opacities, 2.9; uveitis, 2.1; retinitis pigmentosa, 1.7; miscellaneous, 15.6. On proportions of blindness from different causes, see also Report of New York Commission for Blind, 1906, pp. 555-582; Report of Ohio Commission for Blind, 1908, p. 21; Report of Massachusetts Commission for Blind, 1909, pp. 18, 27; Report of New York Committee for Prevention of Blindness, 1911, p. 10; 1917, p. 13; Transactions of American Ophthalmological Society, 1891, pt. 1, p. 156; American Encyclopedia and Dictionary of Ophthalmology, 1916, ii., p. 1171; *News Letter*, Oct., 1917; *Outlook for Blind*, xi., 1918, p. 93; *Journal of American Medical Association*, lxi., 1913, p. 1156; lxiii., 1914, p. 1756; lxxxii., 1924, p. 815; *Lancet-Clinic*, cx., 1913, p. 487; *Ohio State Medical Journal*, iv., 1908, p. 222; *Journal of Missouri State Medical Association*, xxv., 1928, p. 100; xxvii., 1930, p. 283.

CAUSES ACCORDING TO GEOGRAPHIC DIVISIONS

In the following table is given for the several geographic divisions of the country the percentage distribution of the blind according to the leading causes of blindness, in the order of their relative importance (1920).

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS BY GEOGRAPHIC DIVISIONS

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION									
	United States	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Definitely reported causes.....	73.6	79.5	79.2	75.8	74.6	65.7	63.4	60.8	71.6	78.3
Cataract.....	13.7	15.5	13.9	15.2	13.2	12.2	11.6	11.5	12.6	12.5
Glaucoma.....	5.4	7.9	7.1	5.3	5.0	3.7	2.9	3.6	3.8	6.4
Atrophy of optic nerve.....	4.9	5.6	5.1	6.0	5.6	2.8	3.1	3.3	3.8	6.3
Ophthalmia neonatorum.....	3.3	2.8	3.4	3.9	2.5	4.6	3.3	2.6	2.4	2.5
Trachoma (granular eyelids)...	1.6	0.2	0.4	1.7	2.7	0.7	2.5	2.7	4.2	1.9
Diseases of retina.....	1.4	2.2	1.9	1.3	1.3	0.7	0.4	0.6	1.9	2.8
Corneal ulcer.....	0.7	1.4	0.5	0.7	1.0	0.6	0.7	0.9	0.2	0.7
Cancer and other neoplasms...	0.7	0.8	0.7	0.7	0.7	0.8	0.4	0.4	0.6	0.9
Diseases of iris.....	0.7	1.2	0.8	0.7	0.5	0.6	0.2	0.1	0.7	1.1
Measles.....	2.2	1.6	1.5	2.4	3.6	2.2	2.7	2.6	1.4	1.6
Meningitis.....	1.5	1.9	1.5	1.1	1.5	1.6	1.7	2.3	0.9	0.9
Scarlet fever.....	1.2	1.4	2.0	1.1	1.2	0.6	0.4	0.4	1.1	1.0
Kidney disease and diabetes...	0.9	1.1	0.9	0.9	0.7	0.9	0.6	0.7	0.8	1.2
Influenza (grippe).....	0.8	0.6	0.7	0.9	0.8	0.6	0.9	0.7	0.8	1.1
Typhoid fever.....	0.7	0.2	0.6	0.6	1.0	1.0	1.0	1.0	0.4	0.9
Syphilis and locomotor ataxia...	0.7	0.8	0.7	0.9	0.6	0.6	0.5	0.3	0.2	1.2
Smallpox.....	0.7	0.2	0.6	0.6	0.8	0.3	0.5	1.1	3.3	0.5
Accidents.....	16.5	15.1	19.4	15.1	15.9	17.1	15.4	13.7	18.6	20.8
Explosives (dynamite, gun-powder, etc).....	2.2	2.1	2.3	1.5	2.4	2.3	2.0	1.4	6.9	4.0
Firearms.....	1.8	0.7	1.2	1.5	1.5	3.2	3.6	2.4	1.2	1.5
Falls.....	1.2	1.5	1.7	1.1	1.3	1.0	0.7	0.5	0.7	2.1
Flying objects (not from explosions).....	1.1	0.7	1.4	1.1	1.0	1.1	0.5	0.8	1.4	1.6
Cutting or piercing instruments.....	0.9	0.9	0.8	0.7	1.2	1.3	1.3	1.3	0.6	0.6
Burns.....	0.3	0.2	0.3	0.2	0.1	0.6	0.3	0.6	0.1	0.6
All other accidental injuries.....	9.0	9.0	11.7	8.9	8.4	7.5	7.1	6.7	7.7	10.5
Poisoning.....	0.9	1.1	0.8	0.8	0.9	0.8	0.9	0.8	0.8	0.9
Foreign substances in eye.....	1.2	1.1	1.3	1.0	1.4	1.4	0.9	1.4	1.8	0.9
All other definitely reported causes.....	14.0	16.7	15.6	14.9	13.9	12.2	12.7	9.9	11.1	12.2
Indefinitely or inaccurately reported causes.....	25.5	19.9	19.8	23.1	24.5	33.9	35.8	37.9	27.3	20.7
Congenital (cause not stated)...	7.4	5.6	5.8	6.2	6.4	13.4	9.8	9.0	6.1	7.3
Neuralgia.....	1.5	0.2	0.4	0.9	1.8	2.0	3.9	5.7	0.8	0.8
Exposure to heat.....	1.4	0.7	0.8	1.6	1.5	1.8	2.6	2.0	1.5	0.7
Sore eyes.....	1.4	0.6	0.4	0.9	2.1	1.3	3.1	4.6	1.2	0.6
All other.....	13.8	12.8	12.3	13.5	12.7	15.2	16.5	16.6	17.6	11.3
Combination of different classes of causes.....	0.9	0.6	1.0	1.1	0.9	0.5	0.8	1.3	1.1	1.0

In some measure the differences among the several divisions reflect the manner in which report was made as to the causes of blindness, some sections of the country rendering fuller and more accurate reports than others. The relatively low proportions for specific causes in the South are to a large extent owing to this factor. Cataract has a proportion above the normal in the New England and East North

Central divisions, a condition due in considerable degree to the high proportion of old people in those divisions, among whom cataract falls relatively heavily. Glaucoma is highest in the New England and Middle Atlantic divisions, to some extent for the reason just given, and also by reason of the relatively greater number of females here, this sex being more subject to this disease than males. The very low proportions for the South are in part due to the fact that much of glaucoma is reported as neuralgia, often being in fact the same disorder. The proportion for glaucoma is very high in the Pacific division; and if neuralgia is added, also in the West South Central. Atrophy of the optic nerve is seen to be at its highest proportions in the Pacific and East North Central divisions. In the former it may be accounted for in some part by the relatively high proportion of males here, the disease being more frequent among males than among females. Ophthalmia neonatorum has its greatest relative proportions in the South Atlantic and East North Central divisions.¹ For full figures for trachoma there should be added the figures for "sore eyes," the same or a kindred affection; and when this is done, the highest proportions are found in the West South Central, East South Central, Mountain, and West North Central divisions. The northeastern part of the country seems to be relatively free from trachoma. In certain parts of the South, especially the mountainous sections, the disease has been strongly endemic. The high proportion in the Mountain section is largely accounted for by its great prevalence among the Indians there.² Retinal diseases and cancer

¹ The number of pupils admitted to schools for the blind having ophthalmia neonatorum per 100,000 of pupils in the first grade of schools in general for certain States in 1927-1929 was as follows: Arkansas, 1.4; California, 1.8; Colorado, 8.6; Connecticut, 2.7; Illinois, 2.9; Indiana, 6.2; Iowa, 4.5; Kansas, 5.0; Maryland, 2.4; Massachusetts, 1.2; Minnesota, 1.4; Missouri, 1.6; Nebraska, 1.3; New Mexico, 63.4; New York, 2.2; Ohio, 2.2; Oklahoma, 3.9; Pennsylvania, 2.0; Wisconsin, 0.8. In Idaho, South Dakota, Utah, and Washington the ratio was 0. Proceedings of Conference of State and Provincial Health Authorities of North America, 1930, p. 68.

² In particular trachoma has been found to exist throughout the Appalachian system, especially in Kentucky, Tennessee, West Virginia, and Virginia (and to a slight extent in Florida); in the mountainous sections of Missouri and Arkansas; in a few States of the Middle West, as Ohio, Illinois, North Dakota, Minnesota, and Kansas; in a few States of the Southwest, as New Mexico, Arizona, Nevada, Texas, and Oklahoma; and in a few other scattered regions. In the mountains of Kentucky it has seemed to be rooted in certain strongholds. In certain counties of this State of persons examined one-eighth or even more have at one time been found to be affected. American Medical Association, Conservation of Vision Pamphlets, 1913, v. ("Trachoma in Eastern Kentucky"); National Committee for Prevention of Blindness, Publications no. 6, 1915 ("Trachoma a National Menace"); Bulletin of Board of Health of Kentucky, Nov., 1911; May, 1913; July, 1915; *Outlook for Blind*, ix., 1915, p. 61; *Survey*, xxix., 1913, p. 670; United States Public Health Reports, *passim*. Of pupils in the Arkansas School for the blind at one time more pupils were said to be blind from this cause than from any other. Report, 1910, p. 9. On conditions in southern Illinois, see *Illinois Medical Journal*, xxv., 1914, p. 77; *Illinois Institution Quarterly*, i., 1910, 2, Aug., p. 44; ix., 1918, 3, Sept., p. 61. On conditions in other areas, see *News Letter* (National Society for Prevention of Blindness), *passim*; Report of United States Public

appear to have their greatest proportions in the Pacific division, and corneal ulcer and diseases of the iris in the New England.¹

Among general diseases, measles has its greatest proportion in the West North Central division; meningitis, in the West South Central; scarlet fever, in the Middle Atlantic; and kidney disease and diabetes, influenza, and syphilis and locomotor ataxia, in the Pacific. Typhoid fever as a cause of blindness seems especially to prevail in the West North Central and the three Southern divisions. Smallpox has much the highest proportion in the Mountain division, doubtless because of the presence there of a considerable Mexican and Indian population, among which this disease is relatively frequent. Only to a limited extent do the proportions reflect mortality rates in different areas.

With respect to blindness from accidents, the highest proportions generally are in the Pacific, Middle Atlantic, and Mountain divisions, in large part because of hazardous industrial operations, including mining, in these sections. The highest proportion for explosives is in the Mountain division; for falls and flying objects, in the Pacific division; and for firearms and cutting or piercing instruments, in the three Southern divisions. Blindness from poisoning has the highest proportion in the New England division; from foreign substances in the eye, in the Mountain; and from exposure to heat, in the East South Central. Congenital blindness is most frequently reported from the South.

CAUSES ACCORDING TO SEX

To indicate to what extent the various causes of blindness may affect differently males and females, there may be presented figures separately for each of the five groups of causes of blindness which have just been considered—specific eye affections, general diseases, accidents, other definitely reported causes, and indefinitely and inaccurately reported causes. In the following table is given for both sexes, and for males and females separately, for the causes of blind-

Health Service, 1914, pp. 560, 1421; and *passim*; Publications of National Committee for Prevention of Blindness, *loc. cit.*, *passim*; *Journal of American Medical Association*, lxii., 1914, p. 1564; *Ophthalmic Record*, xxii., 1913, p. 649; *New York Medical Journal*, cvi., 1917, p. 708; *Virginia Medical Semi-Monthly*, xix., 1914, p. 443; *Annals of Ophthalmology*, xv., 1906, p. 243; xx., 1911, p. 851; *Ophthalmology*, xii., 1915, p. 41; *Ohio State Medical Journal*, x., 1914, p. 711; xi., 1915, p. 23; *Texas State Journal of Medicine*, iv., 1909, p. 312; xiv., 1918, p. 229; *Journal of Infectious Diseases*, xiv., 1914, p. 261; *Modern Hospital*, v., 1915, pp. 51, 368; *Maryland Medical Journal*, lviii., 1915, p. 277; *Journal of Ophthalmology and Oto-Laryngology*, xi., 1917, p. 35; *Medical News*, lxxxvi., 1905, p. 1067; *Medical Record*, lxiii., 1903, p. 293; lxix., 1906, p. 178; *Medical Review of Reviews*, xxii., 1916, p. 777; *Journal of Arkansas Medical Society*, vii., 1911, p. 229; *Kentucky Medical Journal*, xiii., 1915, p. 5. See also Proceedings of National Society for Prevention of Blindness, 1926, pp. 55-77; 1927, pp. 151-194; 1929, p. 134.

¹ In Massachusetts 2.0 per cent of blindness is said to be due to phlyctenular keratitis. *Survey*, xxxii., 1914, p. 181. See also Massachusetts Commission for Blind, Bulletin no. 2, 1910, "Conservation of Eyesight;" Report, 1915, p. 66; *Ophthalmic Record*, xxiii., 1914, p. 271.

ness due to specific affections of the eye, the percentage distribution by cause (1910 and 1920).

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS FROM SPECIFIC EYE AFFECTIONS

CAUSE OF BLINDNESS (SPECIFIC AFFECTIONS OF EYE)	PER CENT DISTRIBUTION					
	1910			1920		
	Total	Male	Female	Total	Male	Female
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Diseases of conjunctiva.....	13.4	13.3	13.6	15.9	14.9	16.9
Trachoma (granular eyelids)....	5.3	5.6	5.0	4.0	4.1	3.9
Ophthalmia neonatorum.....	7.0	6.6	7.5	8.7	7.6	9.9
Gonococcus conjunctivitis (exclu- sive of ophthalmia neonatorum)	0.3	0.4	0.1	0.3	0.4	0.2
All other ophthalmia and ophthal- mia not specified.....	....	....	....	2.6	2.6	2.6
All other.....	0.8	0.7	0.9	0.2	0.3	0.2
Diseases of cornea.....	3.3	3.4	3.1	3.2	3.1	3.2
Corneal ulcer.....	2.7	2.8	2.6	1.9	2.1	1.7
Staphyloma.....	0.3	0.4	0.3	0.2	0.2	0.1
Keratitis (not otherwise specified)	....	....	....	0.7	0.5	0.9
Corneal opacities.....	....	....	....	0.3	0.2	0.4
All other.....	0.2	0.2	0.2	0.1	0.1	0.1
Diseases of iris.....	1.6	1.6	1.7	1.7	1.6	1.9
Iritis (not otherwise specified)....	....	....	....	1.5	1.4	1.7
All other.....	....	....	....	0.2	0.2	0.2
Diseases of choroid.....	0.2	0.3	0.1	0.5	0.4	0.5
Glaucoma.....	11.9	9.0	15.2	14.0	10.7	17.7
Diseases of retina.....	2.2	2.8	1.5	3.6	4.4	2.7
Retinitis pigmentosa.....	0.3	0.4	0.2	0.3	0.4	0.2
Retinitis hemorrhagica.....	0.5	0.6	0.4	0.8	0.9	0.6
All other retinitis.....	....	....	....	0.7	1.0	0.3
Detachment of retina.....	1.1	1.4	0.8	1.3	1.7	0.8
All other.....	0.2	0.3	0.1	0.6	0.5	0.7
Diseases of optic nerve.....	22.2	27.0	16.6	17.8	22.0	13.0
Atrophy of optic nerve.....	21.7	26.5	16.2	12.7	16.2	8.8
All other.....	0.5	0.5	0.5	5.1	5.8	4.2
Diseases of crystalline lens.....	39.4	36.9	42.2	35.5	35.0	36.0
Cataract.....	39.3	36.8	42.1	35.4	35.0	36.0
All other.....	0.1	0.1	0.1	0.1	0.1	0.1
Amaurosis and other disturbances of vision.....	0.5	0.6	0.3	0.4	0.4	0.4
Progressive myopia.....	0.3	0.3	0.3	0.9	0.9	0.8
Cancer and other neoplasms.....	0.5	0.4	0.6	1.8	1.9	1.7
Neoplasms of eyeball.....	....	....	....	0.9	1.0	0.8
Neoplasms other than of eyeball..	....	....	....	0.9	0.9	0.9
Buphthalmos, hydrophthalmia, macrophthalmia.....	....	....	....	0.4	0.4	0.3
All other diseases of eye.....	0.2	0.2	0.2	1.2	1.1	1.3
Combination of two or more diseases of eye.....	4.3	4.1	4.5	3.3	3.1	3.5

Of the several classes of eye disorders, females are affected to a larger extent than males by those of the conjunctiva, cornea, iris, and choroid, by glaucoma, and by disorders involving the crystalline lens.

In the case of glaucoma the difference between the two sexes is notable, the proportion for females being 17.7 per cent and for males 10.7 per cent. The difference is also appreciable in the case of conjunctival diseases, the proportion for females being 16.9 per cent and for males 14.9 per cent. The situation here seems to be due to the greater frequency among females of ophthalmia neonatorum, there being larger proportions for males attributed to trachoma and gonococcus conjunctivitis. As regards diseases of the cornea, the proportions are larger in the case of females only for keratitis and corneal opacities, while for corneal ulcer and staphyloma the proportions for males are greater. Larger proportions for males are shown in the case of diseases of the retina and of the optic nerve, progressive myopia, cancer and other neoplasms, and buphthalmos and allied disorders. The greatest excess is found in the case of atrophy of the optic nerve, the proportion for males here being 16.2 per cent, as against 8.8 per cent for females. The difference is also considerable with respect to retinal diseases, in practically all classes of which males have a considerably larger proportion. (The only disorder having the same proportion for either sex is amaurosis and kindred eye troubles.)

The reasons for the greater prevalence of some of these eye affections among one sex and of others among the other sex are not always easy to determine. Glaucoma and affections of the crystalline lens (cataract) may obtain to a greater degree among females partly because females generally attain a higher age in life than do males, these diseases being especially operative in the advanced years of life. The higher proportion for males from atrophy of the optic nerve may be due to some extent to their greater liability to venereal diseases, especially syphilis, to which a certain amount of this disorder is due.¹ Such is probably the explanation also of the larger proportion for males from gonococcus conjunctivitis.

In the following table are given similar figures for the diseases of a more general character, or diseases other than specific affections of the eye.

General diseases showing greater proportions for males than for females are as follows: measles, diseases of the head, typhoid fever, smallpox, rheumatism, syphilis, spinal trouble, locomotor ataxia, and diphtheria. In the case of locomotor ataxia the proportion is over ten times as large for males as for females, and in the case of syphilis considerably over twice as great. Diseases showing greater proportions

¹ A factor of some influence is doubtless the physiological drainage of toxins at monthly intervals with females, at the time of life when syphilis is apt to have its most destructive effects.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS FROM GENERAL DISEASES

CAUSE OF BLINDNESS (GENERAL DISEASES)	PER CENT DISTRIBUTION					
	1910			1920		
	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Measles.....	18.0	17.5	18.7	14.2	14.3	14.0
Meningitis.....	13.1	11.1	15.6	9.4	8.6	10.2
Scarlet fever.....	11.4	11.0	11.9	7.4	7.3	7.5
Diseases of head other than meningitis.....	13.7	14.0	13.4	6.8	7.2	6.4
Influenza (grippe).....	8.0	6.1	10.4	5.0	4.8	5.2
Typhoid fever.....	8.2	9.3	6.8	4.5	5.3	3.6
Smallpox.....	8.5	9.6	7.1	4.2	4.5	3.8
Rheumatism.....	....	....	....	3.3	3.4	3.1
Syphilis.....	2.4	3.0	1.6	3.3	4.6	1.9
Other acute eruptions of skin.....	....	....	....	2.9	2.3	3.6
Kidney disease (not otherwise specified).....	....	....	....	2.5	2.2	2.8
Spinal trouble (not otherwise specified).....	2.7	2.4	3.1	2.3	2.5	2.1
Diabetes.....	....	....	....	1.6	1.5	1.7
Puerperal fever.....	....	....	....	1.5	....	3.2
Bright's disease.....	....	....	....	1.4	1.3	1.5
Locomotor ataxia.....	3.1	4.9	0.8	1.2	2.1	0.2
Diphtheria.....	....	....	....	0.8	0.9	0.7
Tuberculosis.....	....	....	....	0.2	0.2	0.3
All other diseases, not specific affections of eye.....	8.4	8.5	8.2	23.4	22.7	24.2
Combination of two or more diseases	2.5	2.6	2.3	4.0	4.1	3.9

for females than for males are the following: meningitis, scarlet fever, influenza (grippe), acute eruptions of the skin, kidney disease, diabetes, Bright's disease, tuberculosis, and puerperal fever. The greater incidence of blindness for one sex or another from certain diseases may be regarded in large part as in correspondence with its greater susceptibility to those diseases. In particular, the larger proportions for venereal diseases as a cause of blindness among males are an indication of their greater prevalence with that sex. In the main, though with a few important exceptions, the sex that shows a greater tendency toward blindness from a given disease is the sex that has the higher mortality rate from that disease.¹ Where this is not the case, the effects of a disease may be of a different character for the two sexes, in one proving fatal, and in the other involving the destruction of vision as possibly one of several consequences.

In the following table are given figures for blindness resulting from accidents.

¹ See Census Bureau, "Mortality Statistics," 1920, etc.

CAUSES OF BLINDNESS

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PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS FROM ACCIDENTS

CAUSE OF BLINDNESS (ACCIDENTS)	PER CENT DISTRIBUTION					
	1910			1920		
	Total	Male	Female	Total	Male	Female
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Directly affecting eye.....	66.7	67.9	60.6	53.3	56.2	39.3
From burns.....	4.1	3.8	5.5	1.9	1.8	2.2
From firearms.....	4.2	4.6	1.9	4.2	4.7	2.1
From cutting or piercing instruments.....	5.7	4.9	9.7	5.5	4.6	9.6
From explosives (dynamite, gunpowder, etc.).....	18.3	21.5	1.4	13.5	15.9	2.0
From flying objects (other than in explosions).....	8.9	9.3	6.6	6.4	7.0	3.6
From all other causes.....	22.6	20.3	34.5	19.9	20.1	19.2
From combination of causes.....	3.0	3.4	0.9	1.9	2.2	0.5
Not directly affecting eye.....	8.4	7.7	12.2	8.6	7.7	13.1
From firearms.....	1.6	1.8	0.6	0.7	0.8	0.5
From falls.....	2.9	2.0	7.3	2.5	1.7	6.3
From all other causes.....	4.0	3.9	4.3	5.4	5.2	6.3
Part affected uncertain.....	24.8	24.4	27.2	37.9	35.9	47.4
From firearms.....	6.1	6.8	2.1	5.7	6.3	2.9
From falls.....	3.0	2.2	7.6	3.9	2.6	10.1
From all other causes.....	15.7	15.3	17.6	28.2	26.9	34.4
From combination of classes of causes.....	0.1	0.1	....	0.2	0.2	0.3

Though accidents in general cause almost five times as much blindness among males as among females, as between different forms there may be higher proportions for one sex than for the other. With explosives the proportion is eight times as large, and with flying objects and with firearms twice as large, in the case of males as in the case of females. In the two first named there is attested the increased hazard to males in industry. With falls the proportion is relatively four times as large, and with cutting or piercing instruments twice as large, in the case of females as in the case of males. With burns the proportion is also relatively greater in the case of females. On the whole, the proportion is larger for males as to accidents directly affecting the eye and larger for females as to those affecting it indirectly.

In the following table are given figures for other definitely reported causes.

The proportion of blindness is greater for males than for females from foreign substances in the eye, especially from acids and like substances, this being due to the greater exposure of males in industrial undertakings. The proportion is several times greater for males as to blindness from most of the forms of poisoning, a condition due to the

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS FROM
OTHER DEFINITE CAUSES

CAUSE OF BLINDNESS (OTHER DEFINITE CAUSES)	PER CENT DISTRIBUTION					
	1910			1920		
	Total	Male	Female	Total	Male	Female
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Poisoning.....	28.0	32.1	14.4	33.2	35.8	25.2
Alcoholic poisoning (other than wood alcohol).....	....	....	....	2.0	2.4	0.9
Tobacco poisoning.....	....	....	....	2.1	2.7	0.4
Wood alcohol poisoning.....	....	....	....	5.4	6.9	0.9
Chronic lead poisoning.....	....	....	....	2.7	3.4	0.4
Other chronic occupational poisoning.....	....	....	....	1.6	2.1	....
All other.....	....	....	....	19.3	18.2	22.6
Malformations.....	16.1	11.1	32.2	15.2	10.9	28.3
Of crystalline lens.....	....	....	....	0.5	0.6	0.4
Albinism.....	....	....	....	2.6	1.4	6.1
All other.....	....	....	....	12.1	8.9	21.7
Foreign substances in eye.....	54.4	55.7	50.0	46.0	48.8	37.4
Acids and other substances of chemically destructive nature..	26.9	26.4	28.9	28.2	30.7	20.4
Dust and other foreign particles..	27.5	29.4	21.1	17.8	18.1	17.0
All other definitely reported causes..	1.6	1.0	3.3	5.7	4.5	9.1

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS FROM
INDEFINITE CAUSES

CAUSE OF BLINDNESS (INDEFINITE CAUSES)	PER CENT DISTRIBUTION					
	1910			1920		
	Total	Male	Female	Total	Male	Female
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Congenital (cause not stated).....	15.4	15.0	15.9	28.9	29.7	27.9
Old age.....	6.4	4.9	8.1	8.4	7.0	10.2
Neuralgia.....	7.3	4.9	10.0	6.0	4.1	8.3
Exposure to heat.....	4.2	5.3	3.0	5.6	7.9	2.7
Sore eyes.....	8.9	8.7	9.1	5.5	4.8	6.2
Strained eyes.....	2.2	2.2	2.2	2.5	2.5	2.4
Military service.....	5.4	10.1	....	2.4	4.5	....
Medical malpractice.....	....	....	....	2.4	2.0	2.9
Scrofula.....	2.3	1.9	2.6	2.3	1.8	3.0
Paralysis.....	1.9	2.1	1.7	2.1	2.2	1.8
Wrong medicine or treatment.....	....	....	....	1.9	1.8	2.1
Colds.....	1.8	1.6	2.1	1.7	1.4	2.0
Catarrh.....	1.5	1.3	1.6	1.3	1.3	1.3
Change of life (menopause).....	....	....	....	1.2	....	2.6
Malaria.....	....	....	....	0.4	0.4	0.4
Electric light.....	....	....	....	0.4	0.5	0.1
Exposure to cold.....	....	....	....	0.3	0.5	0.1
All other.....	42.7	42.0	43.5	26.7	27.3	26.0

circumstances that males are more addicted to the use of alcohol and tobacco, and that males engaged in industrial processes are much more exposed to the toxic action of various substances. The proportion for females is greater as regards malformations, a condition which is doubtless largely an offset to the smaller proportions for this sex elsewhere.

In the preceding table are given figures with respect to causes indefinitely (or inaccurately) reported.

Excess proportions are found for males in the case of congenital blindness, exposure to heat, strained eyes, military service, paralysis, electric light, and exposure to cold. Some of these comparisons plainly indicate occupational effects. Excess proportions are found for females in the case of old age, neuralgia, sore eyes, medical malpractice, scrofula, wrong medicine or treatment, colds, and change of life (menopause). Some of these causes are associated with advanced life, a period attained relatively more often by females than by males. (With catarrh and malaria the proportions are the same for the two sexes.)

CAUSES ACCORDING TO RACE AND NATIVITY

In the following table is given the percentage distribution of the blind by cause, classified according to race and nativity groupings (other colored including Chinese, Japanese, etc.) (1910 and 1920).

The proportions among the colored for specific causes are in general less than they should be, by reason of a relatively greater proportion among them reporting the cause of blindness indefinitely or inaccurately. Cataract prevails to a relatively high degree among foreign-born whites, in large part because of the greater proportions of them in advanced life, the period when this disease is most in operation. It has very low proportions among the Indians. Glaucoma and atrophy of the optic nerve are causes of blindness much more frequently among whites than among colored. The proportion for glaucoma is more than three times as large in the case of both native and foreign-born whites as in the case of Negroes, and the disparity is even greater with respect to Indians. If neuralgia is included with glaucoma, the differences are lessened. As has been previously stated, in many cases where glaucoma is the actual cause, neuralgia is the cause reported.¹ Ophthalmia neonatorum reaches its greatest extent among native whites, and its least among foreign-born. The low proportion for the latter is explained by the fact that very few in this group become blind in early childhood, the time of life when ophthalmia neonatorum

¹ See *American Journal of Ophthalmology*, xiii., 1930, p. 387. Incorrect reports are more frequently made by Negroes and Indians than by whites.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS
BY RACE AND NATIVITY

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION										
	1910						1920				
	WHITE						WHITE				
	Total	Total	Native	Foreign-Born	Negro	Other Colored	Total	Total	Native	Foreign-Born	Indian
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Definitely reported causes.....	58.6	60.7	60.2	63.1	44.1	37.6	73.6	74.7	74.0	78.1	62.5
Cataract.....	12.5	12.6	11.8	16.2	11.6	6.8	13.7	13.8	12.7	19.4	13.2
Glaucoma.....	3.8	4.2	4.0	4.0	1.1	...	5.4	5.8	5.7	6.4	1.8
Atrophy of optic nerve.....	6.0	7.3	7.2	7.8	3.9	1.0	4.9	5.0	5.1	4.8	3.7
Ophthalmia neonatorum.....	2.2	2.4	2.8	0.7	0.7	2.0	3.3	3.5	4.1	0.6	1.9
Trachoma (granular eyelids).....	1.7	1.8	2.1	0.6	0.3	7.8	1.6	1.5	1.7	0.6	21.8
Diseases of retina.....	0.7	0.8	0.8	0.0	0.1	...	1.4	1.5	1.4	1.8	0.3
Corneal ulcer.....	0.0	0.0	1.0	0.7	0.3	1.0	0.7	0.8	0.8	0.4	0.8
Cancer and other neoplasms.....	0.2	0.2	0.2	0.2	0.1	...	0.7	0.7	0.7	0.7	0.3
Diseases of iris.....	0.5	0.6	0.6	0.4	0.3	...	0.7	0.7	0.8	0.3	0.5
Measles.....	1.8	1.0	2.2	0.8	1.6	0.5	2.2	2.3	2.5	1.1	1.6
Meningitis.....	1.3	1.4	1.6	0.4	1.3	...	1.5	1.5	1.7	0.2	1.4
Scarlet fever.....	1.2	1.3	1.4	0.8	0.2	...	1.2	1.3	1.4	0.7	0.3
Kidney disease and diabetes.....	0.5	0.5	0.6	0.5	0.5	...	0.9	0.9	0.9	0.9	0.7
Influenza (grippe).....	0.8	0.8	0.8	0.8	0.8	...	0.8	0.8	0.8	0.8	0.8
Typhoid fever.....	0.8	0.9	0.8	0.9	0.7	0.5	0.7	0.7	0.7	0.6	0.8
Syphilis and locomotor ataxia.....	0.6	0.5	0.5	0.7	0.6	2.0	0.7	0.7	0.7	0.8	0.8
Smallpox.....	0.9	0.9	0.8	1.0	0.7	4.4	0.7	0.7	0.6	0.7	0.6
Accidents.....	15.1	15.1	14.2	19.3	15.2	6.3	16.5	16.5	15.5	21.4	17.4
Explosives (dynamite, gunpowder, etc.).....	2.8	2.9	2.5	4.6	1.7	0.5	2.2	2.3	2.0	3.9	1.6
Firearms.....	1.8	1.5	1.6	0.8	4.3	0.5	1.8	1.5	1.6	0.8	4.8
Falls.....	1.0	1.0	0.9	1.6	0.5	...	1.2	1.3	1.2	1.6	1.1
Flying objects (not from explosions).....	1.3	1.3	1.1	2.3	1.4	1.0	1.1	1.1	1.0	1.5	0.7
Cutting or piercing instruments.....	0.9	0.9	1.1	0.2	0.4	1.0	0.9	1.0	1.1	0.5	0.4
Burns.....	0.6	0.6	0.5	0.7	1.1	0.5	0.3	0.3	0.3	0.4	0.5
All other accidental injuries.....	6.7	6.9	6.4	8.9	5.8	2.9	9.0	9.0	8.3	12.6	8.4
Poisoning.....	0.4	0.4	0.4	0.7	0.2	1.0	0.9	0.9	0.8	1.2	1.0
Foreign substances in eye.....	0.8	0.7	0.6	1.1	1.9	2.9	1.2	1.1	1.0	1.5	2.4
All other definitely reported causes.....	5.1	5.5	5.8	3.8	2.2	1.5	14.0	14.3	14.5	13.2	11.9
Indefinitely or inaccurately reported causes.....	39.7	37.5	38.1	35.0	54.6	60.5	25.5	24.3	25.0	20.9	36.8
Congenital (cause not stated).....	6.1	6.3	7.4	1.5	5.1	3.9	7.4	7.4	8.6	1.4	7.4
Neuralgia.....	2.9	2.8	3.3	1.0	3.3	2.9	1.5	1.5	1.6	0.5	2.2
Exposure to heat.....	1.7	1.1	1.0	1.3	6.3	1.0	1.4	1.1	1.1	1.4	4.5
Sore eyes.....	3.5	3.4	3.7	2.1	4.2	11.2	1.4	1.3	1.4	0.4	1.9
All other.....	25.5	24.0	22.8	29.2	35.8	41.5	13.8	13.1	12.3	17.0	20.8
Combination of different classes of causes.....	1.7	1.7	1.7	1.9	1.3	2.0	0.9	1.0	1.0	1.0	0.7

operates. Trachoma is excessive among the Indian population, being responsible (together with "sore eyes") for approximately one-third of all their blindness.¹ Trachoma is least among Negroes, who seem to be but little susceptible to this disease.² The proportion is also

¹ More recent estimates of the proportion of Indians suffering from trachoma are from one-tenth to one-fourth (some tribes being relatively free from it). See *post*, p. 138; Proceedings of National Society for Prevention of Blindness, 1926, p. 58; *News Letter*, Dec., 1925; *Southern Medical Journal*, xxiv., 1931, p. 894. See also Publications of National Society for Prevention of Blindness, no. 6, 1915, "Trachoma a National Menace" (G. L. Berry), p. 25. See, in addition, Reports of United States Public Health Service, *passim*.

² This is an observation of health and medical authorities generally. See *Journal of American Medical Association*, xxiv., 1900, p. 399; *New York Medical Journal*, lxxviii., 1903, p. 373; *Johns Hopkins Hospital Bulletin*, xviii., 1907, p. 37.

relatively small among foreign-born whites, with whom in the past it has been rather more common. The present low rate with them is probably proof of the effective work which the immigration authorities have done of recent years in barring prospective immigrants suffering from it.¹ The relatively low proportions among the foreign born for other diseases, both specific eye affections and general disorders, are in large part merely the reflection of the relatively high proportion for accidents among them (most also being at a time of life when accidents are most common). There is, however, the additional factor of the greater proportion of foreign-born whites in adult life, a period when the "children's diseases" have largely ceased to operate.

Certain general affections, especially scarlet fever and measles, seem to occasion blindness to a much less degree among Negroes than among whites. This may possibly be due to a greater power of resistance to contagion with respect to such diseases. Among Indians blindness from syphilis and locomotor ataxia and from smallpox is notably above the average.

Because of their extensive employment in hazardous industries, including mining, the foreign born are in a notable degree subject to accidents, risks in the exposure of the eye being no exception. Industrial accidents involving the eye, as already indicated, are most likely to occur through explosives, flying objects, and falls, besides poisoning, which is often an occupational disease; in all of these forms of accidents causing blindness the foreign born are found to have relatively high proportions. Blindness from the improper use of firearms, burns, foreign substances in the eye, and exposure to heat occurs most frequently among Negroes, these factors being sufficient to make the proportion for accidents the highest for any group except the foreign born. Blindness results the more often from cutting or piercing instruments with native whites and Indians. The proportion for accidents in general is lowest of all for Indians.

CAUSES ACCORDING TO AGE AT OCCURRENCE OF BLINDNESS

In the following table is given the percentage distribution of the blind by cause according to age at occurrence of blindness and by age of occurrence according to cause (1920).²

¹ The number of immigrants rejected by reason of trachoma has seldom in one year been as many as two or three thousand, often much less. From 1905 to 1914 less than 0.2 per cent of all immigrants were affected. See report of Census Bureau, "The Blind in the United States: 1910," 1917, pp. 39, 51, 107; United States Public Health Reports, 1915, p. 2437; National Society for Prevention of Blindness, Publications no. 6, 1915, p. 19; Proceedings, 1926, p. 82; Report of New York State Board of Charities, 1910, I., p. 948; *New York State Journal of Medicine*, xii., 1912, p. 283.

² On the correlation of the cause of blindness with the age at occurrence, see Report of Minnesota Commission for Blind, 1923, p. 109.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS BY AGE AT OCCURRENCE

CAUSE OF BLINDNESS	TOTAL	BORN BLIND	LOSING VISION AT AGE OF—						
			Less than 5 Years	5 to 9 Years	10 to 19 Years	20 to 44 Years	45 to 64 Years	65 Years or Over	
			PER CENT DISTRIBUTION						
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Definitely reported causes.....	73.6	30.9	79.7	84.4	82.3	80.1	78.4	73.4	
Cataract.....	13.7	10.3	4.6	4.5	5.0	6.0	15.5	34.1	
Glaucoma.....	5.4	0.4	0.7	0.5	1.9	3.4	11.9	9.3	
Atrophy of optic nerve.....	4.9	2.9	2.0	3.6	4.1	7.7	6.8	3.4	
Ophthalmia neonatorum.....	3.3	5.9	21.0	0.5	0.4	.....	.....	.....	
Trachoma (granular eyelids).....	1.6	0.1	0.9	1.9	3.1	2.2	1.7	0.8	
Diseases of retina.....	1.4	0.3	0.6	0.6	1.3	1.8	2.1	1.5	
Corneal ulcer.....	0.7	0.2	1.4	0.5	0.9	0.9	0.7	0.4	
Cancer and other neoplasms.....	0.7	0.1	0.6	0.9	1.3	1.0	0.5	0.6	
Diseases of iris.....	0.7	0.1	0.1	0.4	0.5	1.3	1.0	0.5	
Measles.....	2.2	0.1	5.0	6.0	4.7	2.3	1.1	0.7	
Meningitis.....	1.5	.....	5.2	6.8	3.3	0.6	0.1	.....	
Scarlet fever.....	1.2	.....	4.1	5.0	2.3	0.7	0.2	0.1	
Kidney disease and diabetes.....	0.9	0.2	0.2	0.1	0.5	0.8	1.6	1.4	
Influenza (grippe).....	0.8	.....	0.6	0.5	0.7	0.8	1.3	1.0	
Typhoid fever.....	0.7	.....	1.1	1.5	1.6	1.0	0.4	0.3	
Syphilis and locomotor ataxia.....	0.7	0.4	0.3	0.7	0.5	1.4	0.9	0.1	
Smallpox.....	0.7	.....	1.8	2.0	1.1	0.4	0.4	0.3	
Accidents.....	16.5	0.6	8.7	29.5	31.7	29.0	15.4	7.2	
Explosives (dynamite, gunpowder, etc.).....	2.2	.....	0.2	2.0	3.4	6.5	1.7	0.3	
Firearms.....	1.8	.....	0.2	2.0	6.7	3.9	0.7	0.3	
Falls.....	1.2	.....	1.2	2.7	1.6	1.4	1.4	1.0	
Flying objects (not from explosions).....	1.1	.....	0.3	1.4	1.7	1.6	1.4	0.7	
Cutting or piercing instruments.....	0.9	.....	2.0	4.9	1.9	0.7	0.3	0.2	
Burns.....	0.3	.....	0.4	0.1	0.3	0.6	0.4	0.2	
All other accidental injuries.....	9.0	0.6	4.4	16.4	16.1	14.4	9.5	4.4	
Poisoning.....	0.9	.....	0.5	0.7	0.9	1.5	1.2	0.5	
Foreign substances in eye.....	1.2	.....	0.7	1.3	1.7	2.1	1.5	0.6	
All other definitely reported causes.....	14.0	9.3	19.4	16.6	14.6	15.3	13.9	10.5	
Indefinitely or inaccurately reported causes.....	25.5	69.1	19.9	14.7	16.6	18.7	20.4	25.4	
Congenital (cause not stated).....	7.4	68.1	.....	.....	.....	.....	.....	.....	
Neuralgia.....	1.5	.....	0.1	0.5	1.2	2.2	2.8	1.8	
Exposure to heat.....	1.4	.....	0.2	0.3	0.6	2.2	2.6	1.5	
Sore eyes.....	1.4	0.1	3.5	2.7	2.7	1.5	0.8	0.4	
All other.....	13.8	0.9	16.1	11.2	12.1	12.9	14.2	21.6	
Combination of different classes of causes.....	0.9	.....	0.4	0.9	1.2	1.1	1.2	1.2	
Total.....	100.0	100.2	11.2	6.3	8.3	21.6	22.3	20.1	
Cause reported.....	100.0	11.2	11.3	6.4	8.4	21.7	21.7	19.3	
Definitely reported causes.....	100.0	4.7	12.3	7.4	9.4	23.7	23.2	19.3	
Cataract.....	100.0	8.5	3.8	2.1	3.1	9.5	24.8	48.2	
Glaucoma.....	100.0	0.7	1.4	0.6	2.9	13.7	47.7	33.0	
Atrophy of optic nerve.....	100.0	6.6	4.6	4.7	7.0	33.8	30.1	13.3	
Ophthalmia neonatorum.....	100.0	21.2	76.6	0.9	1.0	0.3	.....	.....	
Trachoma (granular eyelids).....	100.0	0.6	7.1	8.3	17.3	31.5	25.0	10.2	
Diseases of retina.....	100.0	2.7	5.2	2.7	7.0	28.0	33.2	20.3	
Corneal ulcer.....	100.0	3.1	22.0	4.7	9.8	27.8	20.8	11.8	
Cancer and other neoplasms.....	100.0	1.2	9.9	8.6	16.0	31.3	16.5	16.5	
Diseases of iris.....	100.0	1.3	1.3	3.8	6.8	41.0	32.1	13.7	
Measles.....	100.0	0.3	25.6	17.4	17.7	22.2	10.8	6.1	
Meningitis.....	100.0	0.2	39.9	29.7	19.1	9.0	1.8	0.4	
Scarlet fever.....	100.0	0.2	39.3	27.4	16.3	12.1	3.2	1.5	
Kidney disease and diabetes.....	100.0	2.0	3.0	0.7	4.6	18.8	40.3	30.7	
Influenza (grippe).....	100.0	.....	8.2	4.3	7.1	21.0	34.9	24.6	
Typhoid fever.....	100.0	.....	17.7	13.7	19.3	30.9	11.2	7.2	
Syphilis and locomotor ataxia.....	100.0	6.3	4.6	6.7	6.7	44.2	27.9	3.8	
Smallpox.....	100.0	.....	31.2	19.5	14.3	13.9	13.9	7.4	
Accidents.....	100.0	0.4	5.9	11.4	16.0	37.9	20.1	8.4	
Explosives (dynamite, gunpowder, etc.).....	100.0	.....	1.0	5.7	12.8	62.0	15.9	2.6	
Firearms.....	100.0	.....	1.5	7.1	31.4	47.6	8.6	3.7	
Falls.....	100.0	.....	10.9	13.9	11.1	23.6	24.3	16.2	
Flying objects (not from explosions).....	100.0	.....	3.0	8.8	13.4	32.9	28.5	13.4	
Cutting or piercing instruments.....	100.0		23.8	33.2	16.5	15.2	7.0	4.3	

CAUSES OF BLINDNESS

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PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF BLINDNESS BY AGE AT OCCURRENCE—*Continued*

CAUSE OF BLINDNESS	TOTAL	BORN BLIND	LOSING VISION AT AGE OF—					
			<i>Less than 5 Years</i>	<i>5 to 9 Years</i>	<i>10 to 19 Years</i>	<i>20 to 44 Years</i>	<i>45 to 64 Years</i>	<i>65 Years or Over</i>
PER CENT OF TOTAL— <i>Continued</i>								
Total.....	100.0	10.2	11.2	6.3	8.3	21.6	22.3	20.1
Burns.....	100.0	...	14.3	1.8	8.0	37.5	26.8	11.6
All other accidental injuries.....	100.0	0.8	5.5	11.6	15.0	34.8	22.9	9.4
Poisoning.....	100.0	0.3	6.9	5.2	8.5	38.0	29.2	11.8
Foreign substances in eye.....	100.0	...	6.6	6.6	11.8	37.6	27.2	10.2
All other definitely reported causes.....	100.0	7.5	15.0	7.7	8.9	23.9	21.6	14.6
Indefinitely or inaccurately reported causes.....	100.0	30.0	8.8	3.7	5.4	15.9	17.2	19.0
Congenital (cause not stated).....	100.0	100.0	...	...	...	...	...	...
Neuralgia.....	100.0	...	0.7	2.0	6.3	30.7	38.6	21.6
Exposure to heat.....	100.0	...	1.8	1.2	3.4	32.8	39.9	20.9
Sore eyes.....	100.0	0.6	28.9	12.7	16.2	23.1	12.5	6.0
All other.....	100.0	0.7	13.3	5.2	7.4	20.5	22.5	30.4
Combination of different classes of causes.....	100.0	...	4.3	6.4	10.4	26.1	28.2	24.5
Cause unknown or not reported.....	100.0	2.5	9.9	5.8	7.8	20.6	26.8	26.6

Of persons reported as born blind, over two-thirds give no further statement by which to classify the actual cause. For the remainder of congenital blindness the chief specific causes asserted are cataract, ophthalmia neonatorum, atrophy of the optic nerve, accidents, glaucoma, syphilis, and locomotor ataxia. Accidents, however, figure rather largely in the returns of congenital blindness. Of that blindness occurring under five years, ophthalmia neonatorum, which generally appears within a very short time after birth, easily ranks first, with over one-fifth (21.0 per cent) of all blindness occurring at this period attributable to it. This disease is followed by accidents of various forms, with about one-twelfth, cutting or piercing instruments being much the leading form. At some distance come meningitis and measles, with somewhat lower proportions, together accounting for one-tenth of blindness under five years—or with scarlet fever added for about one-seventh. Cataract and trachoma (with sore eyes) come next. At from five to nine years of age first place is yielded to accidents, considerably over one-fourth (29.5 per cent) of all blindness of this period being thus accounted for, the proportion for cutting or piercing instruments alone (4.9 per cent) standing among the highest single specific causes. Meningitis (6.8 per cent) and measles (6.0 per cent) come next; if scarlet fever (5.0 per cent) is added to these two diseases, nearly one-fifth of all blindness of this period is chargeable to them. Cataract and trachoma stand much as in the preceding period. In this period atrophy of the optic nerve begins to show as a considerable factor in the causation of blindness. From ten to nineteen years, accidents are still far in the lead as a cause of loss of eyesight,

blindness from firearms alone (6.7 per cent) now ranking ahead of any other specific cause. Cataract and atrophy of the optic nerve are steadily mounting. Trachoma has also increased somewhat. Most of the general diseases of childhood affecting eyesight show a falling off.

At from twenty to forty-four, or in early middle life, accidents are again found considerably in the lead, explosives (6.5 per cent) having become the leading form, and indicating the exposure to industrial hazards now arising. After accidents, atrophy of the optic nerve has assumed second place, though cataract is not far behind. Glaucoma at this stage becomes another important factor to be reckoned with. Trachoma has declined. At from forty-five to sixty-four, or in late middle life, the priority passes from accidents to cataract, the proportion for which has more than doubled since the preceding period. Glaucoma has increased at an even greater rate, having more than trebled. Atrophy of the optic nerve shows for the first time a decrease. After sixty-four, or in advanced years, cataract becomes the foremost cause of blindness, being responsible for over one-third (34.1 per cent) of all blindness at that time of life. Glaucoma still ranks high, but not quite as high as in the preceding period. Accidents, while having no such proportions as those of earlier years, are still frequent enough to be entitled to third place.

All the causes of blindness are operative to a greater or less extent at every period of life after birth, except ophthalmia neonatorum (which can scarcely be reported after childhood). Cataract is operative throughout life as a cause of blindness, generally increasing with the years, becoming in old age the outstanding cause. (The lens generally becomes harder after middle age, often attended with more or less loss of accommodation, and with less elasticity.) Almost one-half of the blindness resulting from cataract occurs after sixty-four, or in old age, and nearly three-fourths after forty-four, or after the prime of life.¹ Glaucoma is distinctively a disease of later adult life, nearly one-half occurring between forty-four and sixty-four. (Predisposing conditions as to glaucoma are often those leading to or involving vascular changes, or changes in the blood circulation.) Neuralgia, a cognate affection, shows a slightly earlier rise. Atrophy of the optic nerve, though an active cause at all ages, is mainly a disease of adult life, particularly of early adult life, almost four-fifths occurring after twenty. Ophthalmia neonatorum is naturally confined almost exclusively to early infancy. Trachoma has increasing proportions to the period of early middle age, or from twenty to forty-four years,

¹ On the connection between age and cataract, see *Journal of American Medical Association*, xcvi., 1930, p. 774; *Sight Saving Review*, Sept., 1933, p. 163.

after which it drops. Its kindred disorder, "sore eyes," has a similar trend, except that there is a high proportion in infancy and early childhood, which is properly ascribable, possibly, to some other affection. Diseases of the retina, corneal ulcer, cancer and other neoplasms, and diseases of the iris have a somewhat similar movement, their proportions increasing rather steadily up to early middle life, after which time there is a decline. All of them except retinal diseases reach their greatest strength in early middle life, or from twenty to forty-four years, though corneal ulcer has its next highest proportion in early childhood (at that period probably being confused to some extent with *ophthalmia neonatorum*).

Among general diseases, four of them especially incident to childhood, and largely exanthematic in character, namely, scarlet fever, meningitis, measles, and smallpox, as is to be expected, operate mainly to produce blindness at that time, though measles shows a second high peak in early adult life. Kidney disease, diabetes, and influenza, on the other hand, gradually increase through early life and up to late middle life, with a decline in extreme old age. The same is true of syphilis and locomotor ataxia, except that these two kindred affections are at their highest point in early middle life. Typhoid fever is very high in childhood, but higher still in early middle life.

Accidents or external injuries constitute the most important cause of blindness during the most active period of life, or from five to forty-four, and all but the most important cause up to old age. Accidents are in evidence at earliest life, increasing rapidly through childhood and youth, and reaching their peak, in different forms, in early and middle adult life, after which period there is a gradual decline—all in greater or less keeping with the rise and fall of the active industrial life of man. This movement is also generally true of the several individual causes among accidents, and also of poisoning and foreign substances in the eye. Blindness from cutting or piercing instruments has its peak at an earlier age, however, and blindness from falls and exposure to heat at a later.

The diseases causing a larger part of their blindness in childhood and youth, or under twenty years, than in any other general period of life are, in order, *ophthalmia neonatorum*, meningitis, scarlet fever, smallpox, measles, sore eyes, typhoid fever, corneal ulcer, cancer and other neoplasms, and trachoma. Those causing a larger part in early adult life are syphilis and locomotor ataxia, diseases of the iris, and atrophy of the optic nerve. Those causing a large part in middle or late adult life, not including old age, are glaucoma, kidney disease and diabetes, neuralgia, influenza, and diseases of the retina. The

one disease causing the largest part of its blindness in old age is cataract. A larger part of accidents in general causing blindness occur in early adult life than at any other period. Of accidents from cutting or piercing instruments and from falls a larger part occur in childhood and youth; from explosives, firearms, poisoning, foreign substances in the eye, burns, and flying objects, in early adult life; and from exposure to heat, in later adult life.¹

So far as relation may be discovered between the time of life at which occurs the loss of sight and the part of the eye affected, it seems in general that when the disorder has connection with the conjunctiva, cornea, or iris, and also when cancer and other neoplasms are involved, blindness is likely to result the more often in early life; and that when the disorder has connection with the lens, the retina, or the optic nerve, and also when glaucoma is involved, blindness is likely to come more frequently in later life.

In the following table is given the percentage distribution of male and female blind by cause of blindness according to the age of its occurrence (1920).

PERCENTAGE DISTRIBUTION OF MALE AND FEMALE BLIND BY CAUSE OF BLINDNESS
ACCORDING TO AGE AT OCCURRENCE

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION							
	TOTAL	BORN BLIND	LOSING VISION AT AGE OF—					
			<i>Less than 5 Years</i>	<i>5 to 9 Years</i>	<i>10 to 19 Years</i>	<i>20 to 44 Years</i>	<i>45 to 64 Years</i>	<i>65 Years or Over</i>
MALE								
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Definitely reported causes.....	75.3	29.2	79.7	86.1	85.6	82.4	80.3	73.5
Cataract.....	12.2	10.2	4.5	3.8	4.5	5.0	14.4	32.0
Glaucoma.....	3.7	0.4	0.5	0.3	1.1	2.2	7.9	7.2
Atrophy of optic nerve.....	5.6	2.7	2.1	3.9	4.0	8.3	7.8	4.0
Ophthalmia neonatorum.....	2.6	4.6	19.2	0.5	0.3	....	....	....
Trachoma (granular eyelids).....	1.4	....	0.7	1.1	1.8	2.0	1.8	1.0
Diseases of retina.....	1.5	0.3	0.7	0.6	1.4	1.9	2.4	1.5
Corneal ulcer.....	0.7	0.2	1.4	0.4	0.5	0.9	0.8	0.6
Cancer and other neoplasms.....	0.7	....	0.9	0.8	1.4	0.7	0.5	0.7
Diseases of iris.....	0.5	0.1	0.1	0.1	0.5	0.9	0.7	0.4
Measles.....	2.0	0.1	4.6	5.5	3.6	1.8	1.1	1.0
Meningitis.....	1.2	....	5.1	5.8	2.6	0.3	0.1	0.1
Scarlet fever.....	1.0	....	4.2	4.4	2.0	0.5	0.2	0.1
Kidney disease and diabetes.....	0.7	0.2	0.2	....	0.4	0.5	1.2	1.4
Influenza (grippe).....	0.7	....	0.8	0.5	0.6	0.6	1.1	0.7
Typhoid fever.....	0.7	....	1.3	1.7	1.3	1.0	0.3	0.5
Syphilis and locomotor ataxia.....	0.9	0.3	0.3	0.7	0.6	1.8	1.2	0.2
Smallpox.....	0.6	....	1.8	2.0	1.0	0.4	0.4	0.3
Accidents.....	23.2	0.6	9.6	37.2	43.2	36.9	22.3	10.3
Explosives (dynamite, gunpowder, etc.).....	3.7	....	0.4	3.0	5.2	9.1	2.8	0.5
Firearms.....	2.7	....	0.2	2.4	9.9	5.2	1.1	0.7
Falls.....	1.2	....	1.2	2.3	1.5	1.2	1.5	0.9
Flying objects (not from explosions).....	1.6	....	0.3	2.4	2.3	2.2	2.1	1.2
Cutting or piercing instruments.....	1.1	....	2.2	5.6	2.4	0.8	0.4	0.3

¹ On blindness in middle life, see *News Letter*, Feb., 1928. On blindness in old age, see *Bulletin of New York Academy of Medicine*, v., 1929, p. 76. See also *Scientific American*, cxl., 1929, p. 327.

CAUSES OF BLINDNESS

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PERCENTAGE DISTRIBUTION OF MALE AND FEMALE BLIND BY CAUSE OF BLINDNESS
ACCORDING TO AGE AT OCCURRENCE—*Continued*

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION—Continued							
	TOTAL	BORN BLIND	LOSING VISION AT AGE OF—					
			Less than 5 Years	5 to 9 Years	10 to 19 Years	20 to 44 Years	45 to 64 Years	65 Years or Over
MALE—Continued								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Burns.....	0.4	....	0.4	....	0.5	0.7	0.5	0.3
All other accidental injuries.....	12.4	0.6	4.8	21.5	21.4	17.7	13.9	6.5
Poisoning.....	1.2	....	0.6	0.7	0.9	1.9	1.7	0.9
Foreign substances in eye.....	1.6	....	0.7	1.3	2.0	2.6	2.3	1.0
All other definitely reported causes.....	12.4	9.3	20.4	14.7	11.8	12.0	12.2	9.7
Indefinitely or inaccurately reported causes.....	23.5	70.8	19.9	12.8	13.2	16.3	18.1	24.8
Congenital (cause not stated).....	7.0	69.9	....	....	....	....	....	....
Neuralgia.....	1.0	....	0.1	0.5	0.6	1.3	1.6	1.2
Exposure to heat.....	1.9	....	0.4	0.2	0.7	2.5	3.4	2.2
Sore eyes.....	1.1	0.1	3.0	2.4	2.0	1.2	0.5	0.5
All other.....	12.5	0.9	16.4	9.6	9.9	11.3	12.6	21.0
Combination of different classes of causes.....	1.2	....	0.4	1.1	1.3	1.2	1.6	1.7
FEMALE								
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Definitely reported causes.....	71.1	33.0	79.7	82.2	76.7	74.7	75.6	73.4
Cataract.....	15.9	10.5	4.8	5.3	6.0	8.2	17.2	30.4
Glaucoma.....	7.8	0.3	0.8	0.7	3.1	6.4	17.9	11.6
Atrophy of optic nerve.....	3.9	3.2	2.0	3.2	4.3	6.0	5.4	2.7
Ophthalmia neonatorum.....	4.4	7.4	23.0	0.4	0.5	0.1	....	....
Trachoma (granular eyelids).....	1.7	0.1	1.2	2.9	5.2	2.7	1.6	0.6
Diseases of retina.....	1.2	0.3	0.5	0.6	1.1	1.5	1.7	1.4
Corneal ulcer.....	0.7	0.2	1.5	0.7	1.4	1.1	0.6	0.3
Cancer and other neoplasms.....	0.7	0.1	0.3	1.1	1.2	1.7	0.6	0.5
Diseases of iris.....	0.9	0.1	0.1	0.8	0.6	2.1	1.4	0.5
Measles.....	2.6	....	5.5	6.7	6.4	3.4	1.2	0.4
Meningitis.....	1.9	....	5.3	8.1	4.6	1.3	0.1	....
Scarlet fever.....	1.4	0.1	3.9	5.7	2.8	1.1	0.2	0.1
Kidney disease and diabetes.....	1.1	0.1	0.3	0.2	0.6	1.4	2.2	1.4
Influenza (grippe).....	1.0	....	0.4	0.6	0.8	1.2	1.5	1.4
Typhoid fever.....	0.7	....	1.0	1.3	2.2	1.0	0.5	0.1
Syphilis and locomotor ataxia.....	0.4	0.5	0.2	0.7	0.5	0.4	0.4	0.1
Smallpox.....	0.7	....	1.9	2.1	1.4	0.4	0.4	0.3
Accidents.....	7.0	0.7	7.6	20.0	12.4	10.0	5.1	3.8
Explosives (dynamite, gunpowder, etc.).....	0.1	....	....	0.8	0.5	0.2	....	....
Firearms.....	0.4	....	0.2	1.4	1.3	0.9	0.1	....
Falls.....	1.3	....	1.2	3.2	1.9	1.6	1.0	1.2
Flying objects (not from explosions).....	0.3	....	0.2	0.3	0.6	0.2	0.3	0.3
Cutting or piercing instruments.....	0.7	....	1.8	4.0	0.9	0.3	0.1	0.1
Burns.....	0.2	....	0.4	0.2	....	0.2	0.2	0.1
All other accidental injuries.....	4.0	0.7	3.9	10.0	7.2	6.7	3.4	2.1
Poisoning.....	0.4	....	0.4	0.7	0.9	0.7	0.5	0.1
Foreign substances in eye.....	0.6	....	0.7	1.2	1.2	0.9	0.5	0.3
All other definitely reported causes.....	16.4	9.4	18.5	19.1	19.4	23.1	16.5	11.4
Indefinitely or inaccurately reported causes.....	28.3	67.0	19.9	17.0	22.3	24.5	23.8	26.0
Congenital (cause not stated).....	7.9	66.0	....	....	....	....	....	....
Neuralgia.....	2.3	....	0.1	0.5	2.1	4.3	4.5	2.4
Exposure to heat.....	0.8	....	0.1	0.3	0.5	1.3	1.5	0.8
Sore eyes.....	1.8	0.1	4.1	3.1	3.0	2.2	1.2	0.4
All other.....	15.6	0.9	15.7	13.1	15.8	16.6	16.6	22.4
Combination of different classes of causes.....	0.6	....	0.3	0.8	1.0	0.9	0.6	0.6

Few considerable variations are found in the proportions for the two sexes at the different periods. With cataract, though greater at all ages for females than for males, the least difference is in infancy and early childhood, and the greatest in early adult life; and with glaucoma, the greatest in early and middle life, a condition largely

true of neuralgia as well. With atrophy of the optic nerve the proportion is greater for females than for males among those born blind. With trachoma the proportion for females exceeds that for males up to middle life. Cancer and other neoplasms have a serious effect upon females in early adult life. The greatest difference between the two sexes in the proportions for syphilis is in adult life. Particular liability to loss of sight from accidents for males begins in the years of youth, though the relatively high proportion for some forms of accidents among females in early adult life may be an indication of their entry into industrial life and of its effects at that period.

CAUSES ACCORDING TO PREVIOUS OCCUPATION

Somewhat further light may be thrown upon the question of the causation of blindness by an examination of the occupations in which the blind were engaged prior to the loss of their sight, or the occupations from which the present blind population may be said to be recruited. This will serve to bring out the risk of loss of sight in different occupations, or to indicate in which ones there is special hazard of disease or accident to the eye.¹

In the table on pages 35-38 is given, for each of the principal causes of blindness, the percentage distribution of the blind twenty years of age and over, who had been gainfully employed before the loss of sight, according to the occupations in which they were engaged—the occupations selected being those in which there were 100 or more engaged, and somewhat typical of different industrial activities of the United States (1920).²

It is not always easy to determine why there should be greater liability to blindness from particular causes, especially diseases, in certain occupations than in others. In not a few cases it may not be far wrong to assume that the higher proportions are little more than

¹ Occupations of blind persons in California before the occurrence of their blindness, with the percentage for each, are as follows: domestic service, 14.2; skilled workers, 8.7; farmers and allied groups, 5.0; laborers, 13.0; professional workers, 4.6; students, 6.2; business men, 2.6; salesmen, 1.1; musicians and entertainers, 1.0; clerical workers, 2.0; miscellaneous workers, 1.3; not working, incapable of work, or blind from infancy, 16.3; not specified, 24.0. Report of California Department of Public Welfare, 1926, p. 149. See also California Department of Social Welfare, "The Adult Blind in California," 1929, p. 7. On the correlation of the causes of blindness with previous occupation, see Report of Minnesota Commission for Blind, 1923, p. 113.

² With farmers are included persons engaged in stock raising, fruit growing, gardening, forestry, etc.; with carpenters, cabinet makers; with blacksmiths and forgers, hammermen; with soldiers and sailors, marines; with machinists and toolmakers, millwrights; with cooks and servants, waiters; with manufacturers and managers, officials and contractors; and with teachers, college presidents and professors. With chauffeurs and teamsters, with painters, and with firemen each there are included allied groups. From wholesale and retail dealers are excluded hucksters and peddlers. With clerks and stenographers are not to be included clerks in stores. Engineers and firemen are both of stationary character.

CAUSES OF BLINDNESS

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PERCENTAGE DISTRIBUTION OF BLIND BY CAUSE ACCORDING TO PREVIOUS OCCUPATION

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION							
	MALES							
	Total	Farm- ers	Labor- ers (Build- ing and General)	Car- penters	Whole- sale and Retail Dealers	Profes- sional Service	Mine Opera- tives (not Coal)	Agri- cul- tural Labor- ers
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Specific affection of eye.....	39.3	40.6	35.4	43.7	53.6	53.6	11.9	36.6
Cataract.....	15.2	18.5	10.6	21.2	14.0	11.3	5.3	13.4
Atrophy of optic nerve.....	7.2	5.2	5.0	7.6	14.2	12.7	2.2	3.9
Glaucoma.....	5.5	4.3	3.6	5.4	14.0	12.2	1.1	1.6
Trachoma (granular eyelids).....	1.7	2.8	1.5	1.1	0.7	1.1	1.1	4.7
Corneal ulcer.....	0.8	1.1	0.7	1.1	0.5	0.5	0.7	1.2
Detachment of retina.....	0.7	0.6	0.1	0.2	0.5	2.9	0.2	....
Diseases of iris.....	0.7	0.6	0.6	0.4	0.9	1.8	....	0.4
All other.....	7.5	7.4	7.3	6.7	9.0	11.1	1.3	11.4
Diseases other than specific affection of eye.....	11.2	11.7	10.8	11.0	14.6	10.4	4.2	12.2
Measles.....	1.4	2.6	1.6	0.9	0.7	0.5	0.2	2.8
Kidney disease and diabetes.....	0.9	1.0	1.0	0.9	2.0	1.8	....	0.4
Influenza (grippe).....	0.8	1.0	0.3	0.2	1.6	0.9	0.2	1.2
Typhoid fever.....	0.6	0.8	0.5	0.6	0.7	0.5	0.9	2.0
Rheumatism.....	0.6	0.6	0.6	1.7	0.5	0.2	0.4	0.4
Locomotor ataxia.....	0.5	0.2	0.2	0.4	0.7	0.5	0.4	....
Diseases of head other than menin- gitis.....	0.4	0.4	0.4	0.9	....	0.2	0.2	....
All other.....	6.0	4.9	6.3	5.4	8.6	5.9	1.8	5.5
Accident or other injury (including sympathetic ophthalmia).....	25.3	20.2	27.1	24.0	14.4	13.1	74.5	22.0
Explosions of dynamite, gunpowder, etc.....	4.7	2.4	5.3	2.2	0.9	2.0	43.3	3.1
Firearms.....	2.7	3.7	1.4	2.8	1.6	1.6	1.5	3.1
Flying objects other than in explo- sions.....	2.0	1.6	2.8	2.2	0.7	....	2.2	1.6
Explosions, of other than of dyna- mite, etc., or not specified.....	1.8	0.5	1.7	0.4	0.5	1.8	10.5	....
Falls.....	1.3	0.9	1.1	2.2	1.6	0.7	0.7	0.8
Blows to head.....	0.8	0.6	0.7	0.9	0.7	0.2	0.2	0.4
In mines or quarries.....	0.6	....	0.3	....	0.2	....	9.7	....
Cutting or piercing instruments.....	0.6	0.7	0.6	1.3	0.5	0.2	....	0.4
Burns.....	0.5	0.2	0.6	0.2	....	....	0.4	1.2
All other.....	10.4	9.5	12.6	11.9	7.9	6.6	5.9	11.4
Poisoning.....	1.6	1.0	1.2	2.2	1.1	2.3	1.3	2.0
Foreign substances in eye.....	2.1	1.3	3.6	1.5	1.6	1.1	1.3	2.0
Acids and other chemically destruc- tive substances.....	1.3	0.4	2.8	0.6	0.9	1.1	0.7	0.4
Dust and other foreign particles.....	0.8	0.8	0.7	0.9	0.7	....	0.7	1.6
All other definitely reported causes.....	1.7	2.0	1.9	2.8	0.9	2.0	0.7	2.0
Causes indefinitely or inaccurately re- ported.....	18.8	23.2	20.0	14.7	13.7	17.4	6.2	23.2
Exposure to heat.....	2.8	2.9	2.6	2.6	1.1	0.7	0.4	2.0
Old age.....	2.2	3.3	2.9	2.8	1.8	1.1	1.1	3.1
Military service.....	1.6	2.5	1.0	1.1	0.9	1.8	0.2	0.8
Neuralgia.....	1.3	2.7	0.7	1.3	1.1	0.5	0.4	2.0
Strained eyes.....	0.9	0.5	0.4	0.9	1.6	4.1	....	1.2
Sore eyes.....	0.7	1.4	0.6	....	0.5	0.5	....	3.1
Catarrh and colds.....	0.7	1.0	0.6	0.4	0.7	....	0.4	1.2
Paralysis.....	0.7	0.6	0.6	0.4	0.7	0.9	0.4	....
Electric light.....	0.2	....	....	0.2	....	0.7	....	....
All other.....	7.7	8.3	10.7	5.0	5.4	7.2	3.1	9.8

PERCENTAGE DISTRIBUTION OF BLIND BY CAUSE ACCORDING TO PREVIOUS
OCCUPATION—*Continued*

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION— <i>Continued</i>							
	MALES— <i>Continued</i>							
	<i>Rail- road Work- ers</i>	<i>Chauf- eurs and Team- sters</i>	<i>Black- smiths and Forge- men</i>	<i>Me- chanics</i>	<i>Sol- diers and Sailors</i>	<i>Coal Mine Oper- atives</i>	<i>Ma- chin- ists and Tool- makers</i>	<i>Clerks and Sales- men</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Specific affection of eye.....	41.1	37.9	32.7	36.5	13.7	20.4	35.3	52.1
Cataract.....	16.3	14.1	15.0	13.9	5.3	6.8	8.4	11.6
Atrophy of optic nerve.....	10.2	8.1	4.1	6.7	2.6	5.2	5.4	15.8
Glaucoma.....	4.5	4.5	4.1	7.7	1.6	2.1	9.0	13.0
Trachoma (granular eyelids).....	0.8	1.0	0.5	1.9	1.1	1.6	0.6	....
Corneal ulcer.....	0.4	0.5	0.9	0.5	0.5	1.0	0.6	....
Detachment of retina.....	2.0	1.0	0.5	....	....	0.5	3.0	3.4
Diseases of iris.....	1.6	0.5	1.4	0.5	....	....	1.2	1.4
All other.....	5.3	8.1	6.4	5.3	2.6	3.1	7.2	6.8
Diseases other than specific affection of eye.....	8.9	12.6	6.4	11.1	12.1	4.7	10.2	12.3
Measles.....	1.2	0.5	....	....	0.5	1.6	....	....
Kidney disease and diabetes.....	0.8	1.0	....	0.5	0.5	....	1.2	0.7
Influenza (grippe).....	....	0.5	0.5	1.0	0.5	0.5	....	....
Typhoid fever.....	....	0.5	0.5	0.5	....	....	0.6	0.7
Rheumatism.....	0.8	....	....	1.9	0.5	0.5	0.6	....
Locomotor ataxia.....	0.8	1.5	....	....	....	....	0.6	1.4
Diseases of head other than meningitis.....	0.4	0.5	0.5	0.5	....	....	0.6	....
All other.....	4.9	8.1	5.0	6.7	10.0	2.1	6.6	9.6
Accident or other injury (including sympathetic ophthalmia).....	32.1	24.2	31.8	35.1	42.6	62.8	42.5	19.9
Explosions of dynamite, gunpowder, etc.....	3.7	....	2.3	1.0	15.3	19.9	0.6	....
Firearms.....	2.4	1.5	1.8	1.9	8.0	4.7	3.0	3.4
Flying objects other than in explosions.....	2.8	1.5	4.5	7.7	0.5	3.1	10.2	....
Explosions, of other than of dynamite, etc., or not specified.....	1.6	1.0	1.4	5.3	2.1	8.9	1.8	2.1
Falls.....	1.6	2.5	0.5	1.4	0.5	2.6	3.6	2.7
Blows to head.....	1.6	0.5	1.8	1.0	1.6	1.0	0.6	0.7
In mines or quarries.....	....	....	....	....	....	11.5	....	....
Cutting or piercing instruments.....	0.8	0.5	....	1.4	....	0.5	....	0.7
Burns.....	1.2	0.5	3.2	0.5	1.1	1.0	0.6	....
All other.....	16.3	16.2	16.4	14.0	12.6	9.4	22.2	10.3
Poisoning.....	1.2	2.0	0.5	1.0	1.1	1.0	1.8	1.4
Foreign substances in eye.....	1.2	2.5	0.9	2.4	7.4	1.6	1.8	2.1
Acids and other chemically destructive substances.....	0.8	2.0	0.5	1.9	5.3	1.6	0.6	2.1
Dust and other foreign particles.....	0.4	0.5	0.5	0.5	2.1	....	1.2	....
All other definitely reported causes.....	1.2	1.5	2.3	1.0	2.1	0.5	1.8	1.4
Causes indefinitely or inaccurately reported.....	14.2	19.2	25.5	13.0	21.1	8.9	6.6	11.0
Exposure to heat.....	4.5	1.5	12.3	2.9	1.6	1.0	1.8	0.7
Old age.....	....	3.0	3.6	1.4	....	0.5	0.6	1.4
Military service.....	....	....	0.9	0.5	12.6	....	1.2	0.7
Neuralgia.....	....	1.0	1.4	....	....	....	....	....
Strained eyes.....	0.8	1.5	....	0.5	0.5	0.5	0.6	0.7
Sore eyes.....	....	....	0.5	0.5	1.1	0.5	....	....
Catarrh and colds.....	....	1.0	0.9	....	....	....	0.6	....
Paralysis.....	1.2	1.0	0.9	....	....	0.5	1.2	2.1
Electric light.....	....	....	....	1.0	....	....	....	....
All other.....	7.7	10.1	5.0	6.3	5.3	5.8	0.6	5.5

PERCENTAGE DISTRIBUTION OF BLIND BY CAUSE ACCORDING TO PREVIOUS
OCCUPATION—Continued

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION—Continued							
	MALES—Continued							
	Cooks and Serv- ants	Paint- ers	Brick and Stone Ma- sons	Clerks and Stenog- raphers	Engi- neers and Crane- men	Iron and Steel Opera- tives	Fire- men	Man- ufac- turers and Man- agers
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Specific affection of eye.....	41.6	42.8	36.6	61.9	33.1	37.4	27.4	57.3
Cataract.....	10.2	16.6	18.6	14.4	10.3	15.4	10.4	22.3
Atrophy of optic nerve.....	12.4	7.6	1.4	16.5	5.1	8.9	6.6	11.7
Glaucoma.....	5.1	9.7	6.2	10.8	4.4	2.4	2.8	14.6
Trachoma (granular eyelids).....	1.5	....	0.7	1.4	0.7	0.8	....	1.9
Corneal ulcer.....	0.7	....	2.1	0.7	0.7	....	....	....
Detachment of retina.....	0.7	0.7	....	1.4	....	1.6	....	1.0
Diseases of iris.....	0.7	0.7	0.7	3.6	....	1.6	0.9	....
All other.....	10.2	7.6	6.9	12.9	11.8	6.5	6.6	5.8
Diseases other than specific affection of eye.....	10.2	10.3	3.4	10.1	10.3	12.2	6.6	7.8
Measles.....	....	....	0.7	....	1.5	....	....	....
Kidney disease and diabetes.....	0.7	....	....	1.4	....	....	0.9	1.0
Influenza (grippe).....	0.7	....	....	0.7	0.7	0.8	....	1.0
Typhoid fever.....	....	....	....	....	1.5	....	0.9	....
Rheumatism.....	0.7	0.7	....	0.7	....	....	0.9	....
Locomotor ataxia.....	1.5	1.4	....	0.7	....	0.8	....	2.9
Diseases of head other than meningitis	0.7	....	....	0.7	....	0.8	0.9	....
All other.....	5.8	8.3	2.8	5.8	6.6	9.8	2.8	2.9
Accident or other injury (including sympathetic ophthalmia).....	16.8	17.2	31.0	13.7	34.6	35.0	21.7	22.3
Explosions of dynamite, gunpowder, etc.....	1.5	0.7	8.3	2.2	0.7	1.6	2.8	7.8
Firearms.....	0.7	2.1	0.7	1.4	....	4.1	1.9	1.0
Flying objects other than in explosives	1.5	1.4	4.1	....	4.4	4.9	0.9	1.9
Explosions, of other than of dynamite, etc., or not specified.....	....	0.7	1.4	2.2	6.6	4.1	3.8	4.9
Falls.....	2.9	2.1	2.1	....	1.5	1.6	....	1.9
Blows to head.....	2.2	....	0.7	0.7	0.7	0.8	....	....
In mines or quarries.....	....	0.7	0.7	....	1.5	....	....	....
Cutting or piercing instruments.....	....	....	0.7	....	0.7	....	....	....
Burns.....	0.7	1.4	....	....	1.5	2.4	3.8	1.0
All other.....	7.3	8.3	12.4	7.2	16.9	15.4	8.5	3.9
Poisoning.....	1.5	16.6	2.1	2.2	....	....	....	....
Foreign substances in eye.....	1.5	1.4	8.3	0.7	1.5	3.3	2.8	1.0
Acids and other chemically destruc- tive substances.....	0.7	0.7	7.6	0.7	1.5	0.8	2.8	1.0
Dust and other foreign particles.....	0.7	0.7	0.7	....	....	2.4	....	....
All other definitely reported causes.....	0.7	0.7	2.1	1.4	2.2	0.8	0.9	2.9
Causes indefinitely or inaccurately re- ported.....	27.7	11.0	16.6	10.1	18.4	11.4	40.6	8.7
Exposure to heat.....	11.7	2.1	1.4	....	8.1	4.1	32.1	1.0
Old age.....	0.7	1.4	2.1	0.7	0.7	0.8	0.9	1.0
Military service.....	....	0.7	2.1	1.4	0.7	0.8	....	....
Neuralgia.....	0.7	0.7	0.7	....	....	....	....	....
Strained eyes.....	....	....	0.7	2.2	....	0.8	....	1.0
Sore eyes.....	0.7	....	....	....	....	....	....	....
Catarrh and colds.....	0.7	0.7	0.7	....	....	0.8	0.9	....
Paralysis.....	2.2	0.7	0.7	....	....	0.8	....	1.0
Electric light.....	1.5	....	....	....	2.9	....	....	....
All other.....	9.5	4.8	8.3	5.8	5.9	3.3	6.6	4.9

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND BY CAUSE ACCORDING TO PREVIOUS
OCCUPATION—*Continued*

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION— <i>Continued</i>							
	FEMALES							
	Total	Farm- ers	Wait- resses and Serv- ants	Dress- makers and Seam- stresses	Laun- dry Work- ers	Teach- ers	Cooks	Agri- cultural Labor- ers
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Specific affection of eye.....	45.9	37.8	44.7	50.6	34.5	66.0	33.3	34.7
Cataract.....	18.5	22.5	19.5	17.2	21.1	12.0	22.0	18.5
Glaucoma.....	10.8	7.5	7.5	14.6	3.6	20.1	4.5	4.8
Atrophy of optic nerve.....	3.9	0.8	4.5	6.2	0.4	7.2	2.8	1.6
Diseases of iris.....	1.6	0.3	2.4	2.3	...	3.3	...	...
Trachoma (granular eyelids).....	1.0	1.3	1.1	1.0	...	0.5	0.6	3.2
Detachment of retina.....	0.7	0.3	0.8	0.3	...	2.0	0.6	...
Corneal ulcer.....	0.6	0.5	0.5	0.3	0.4	1.0	...	0.8
All other.....	8.9	4.7	8.3	8.8	4.5	19.1	2.8	5.6
Diseases other than specific affection of eye.....	15.4	10.4	17.0	16.2	17.0	15.3	13.6	8.1
Measles.....	1.2	0.8	3.2	...	1.8	1.0	1.1	1.6
Kidney disease and diabetes.....	1.1	1.0	1.3	1.0	0.0	2.0	...	...
Influenza (grippe).....	1.0	1.0	0.3	1.0	0.4	1.0	2.3	...
Rheumatism.....	0.8	0.5	1.0	0.6	0.4	1.0	...	...
Typhoid fever.....	0.6	0.5	0.5	1.0	1.3	1.0	...	...
Diseases of head other than men- ingitis.....	0.5	0.5	0.3	0.3	1.3	...	0.6	0.8
All other.....	10.2	6.0	10.4	12.3	10.8	8.6	9.6	5.6
Accident or other injury (including sympathetic ophthalmia).....	7.3	5.2	9.1	8.1	8.5	3.3	6.2	3.2
Falls.....	1.6	0.3	2.1	1.9	1.8	1.0	1.1	...
Firearms.....	0.4	0.8	0.5	...	0.4	0.5	...	0.8
Flying objects, other than in explo- sions.....	0.4	0.5	...	...	0.0	0.5	0.6	...
Blows to head.....	0.4	0.5	0.5	0.3	0.0	...	1.1	...
Cutting or piercing instruments.....	0.2	0.3	...	...	0.0	...	...	...
Explosives.....	0.2	...	...	...	0.4	...	...	...
Burns.....	0.2	0.3	...	...	...	...	1.1	...
All other.....	4.0	2.6	5.0	5.8	3.1	1.4	2.3	2.4
Foreign substances in eye.....	1.0	0.8	0.8	...	2.2	0.5	1.7	3.2
All other definitely reported causes....	1.4	0.8	2.4	1.6	0.9	1.0	1.1	2.4
Causes indefinitely or inaccurately re- ported.....	29.0	45.1	25.1	23.4	36.8	13.9	44.1	48.4
Old age.....	4.1	8.3	3.5	2.3	4.5	1.9	3.4	9.7
Neuralgia.....	3.7	9.3	3.5	1.6	5.8	2.4	2.8	8.1
Exposure to heat.....	2.6	1.0	0.5	...	4.0	...	20.9	5.6
Strained eyes.....	2.0	1.0	0.3	0.4	1.3	1.4	0.6	...
Sore eyes.....	1.4	3.4	2.1	0.3	0.9	0.5	1.1	2.4
Catarrh and colds.....	0.8	1.0	2.1	0.3	...	0.5	1.1	2.4
Paralysis.....	0.6	0.5	1.3	1.0	0.4	...	...	0.8
All other.....	13.7	20.5	11.8	8.4	19.7	7.2	14.1	19.4

the reflection of the general tendency for given diseases to manifest themselves at particular age periods, some occupations being engaged in at a later time in life than others. In other cases the real connection between the cause of blindness and occupation may eventually be found to be of a more intimate nature than can now be predicted. In general, blindness from a specific affection of the eye seems most often to result among persons engaged in indoor occupations, especially stores and offices, and least among those engaged in manual or outdoor labor. There are exceptions, however, which probably indicate a relationship between certain specific affections and a given occupation. The tendency for certain diseases to operate at particular

times of life may be said to have illustration in the case of cataract, the high rates in certain occupations doubtless in great part being accounted for by the relatively large numbers in them of persons in advanced years, at which period this disease becomes most active. In addition, proportions above the average are found for several kinds of building and construction occupations, indicating an increased liability to cataract therein. Glaucoma is also more or less prevalent in advanced years, though in a few occupations it is probable that other factors are involved as well, including to some extent possibly indoor activities in which the eye is put to heavy use. Neuralgia, a disorder akin to glaucoma, obtains especially among persons in agricultural life, persons who generally live to rather advanced years. Atrophy of the optic nerve shows relatively high proportions in the same occupations in which locomotor ataxia does, a circumstance very likely indicating that the original and underlying cause in both cases is not infrequently venereal affection. The prevalence of trachoma (and of its concomitant disorder, "sore eyes") among persons in agricultural pursuits is chiefly because the predominance of these diseases is for the most part in rural sections. Corneal ulcer apparently exists most strongly in certain occupations requiring manual labor, sometimes of a rather heavy nature. Detachment of the retina and diseases of the iris are found with relative frequency among persons occupied in professional service, in certain clerical tasks, and in certain mechanical tasks. Among general diseases, measles shows a relatively high proportion for persons engaged in agriculture, though possibly in some cases the actual cause was a different one. Variations among diseases of general character in the different occupations are doubtless in considerable part explained by the time of life at which they are most in operation and by the prevailing living conditions attending these occupations.

The most striking indication of this bearing of specific employment upon the loss of sight is met in the matter of accidents to the eye (including sympathetic ophthalmia) occasioned in industrial operations. In certain occupations the exposure of the workers is very evident. In mining, in military service, and in the work of machine tenders and like operatives, the proportions made blind by accidents are doubled or more over the proportions for the blind as a whole; while in several other occupations, especially those of a mechanical character, the proportions are materially enlarged. To accidents practically three-fourths (74.5 per cent) of the former operatives in mines (other than coal mines) owe their blindness; over three-fifths (62.8 per cent) of coal mine operatives; over two-fifths of soldiers and

sailors (42.6 per cent) and of machinists and toolmakers (42.5 per cent); and approximately one-third of mechanics (35.1 per cent), iron and steel operatives (35.0 per cent), engineers and cranemen (34.6 per cent), railroad workers (32.1 per cent), blacksmiths and forgemen (31.8 per cent), and brick and stone masons (31.0 per cent).

In certain particular forms of accidents industrial hazards become even more pronounced. Explosions of gunpowder, dynamite, etc. occasion from nine to three times as much blindness among coal miners, other miners, and persons in military service as they do among all occupational groups taken together (one-half of quarry workers being blinded from this cause); in each of these occupations they constitute the most commonly reported cause of blindness. Explosions of other kinds destroy the sight from six to two times as often among miners of both classes, engineers and cranemen, mechanics, persons in managerial positions, iron and steel operatives, and firemen as they do on the average. Accidents in mines or quarries not otherwise specified are responsible for from nineteen to sixteen times as much blindness among coal and other miners. From five to two times as much blindness is caused by flying objects not in explosions among machinists and toolmakers, mechanics, iron and steel operatives, blacksmiths and forgemen, engineers and cranemen, and brick and stone masons. Twice as much of the destruction of vision among mechanics and carpenters is occasioned by cutting or piercing instruments. From burns blindness happens from seven to three times as often among firemen, blacksmiths and forgemen, iron and steel operatives, engineers and cranemen, and painters. Falls are accountable for from three to two times as much blindness among machinists and toolmakers, cooks and servants, clerks and salesmen, coal miners, chauffeurs and teamsters, carpenters, painters, and brick and stone masons. Blows on the head result in blindness from three to two times as often among cooks and servants, blacksmiths and forgemen, railroad workers, and persons in military service. With respect to firearms (which is without any obvious connection with industry) cases of blindness are from three to two times as numerous among persons in military service, coal miners, and iron and steel operatives. Blindness from poisoning is ten times as likely among painters, and is considerably more likely among persons in professional service, clerks and stenographers, carpenters, brick and stone masons, chauffeurs and teamsters, and agricultural laborers. Foreign substances in the eye induce blindness from four to two times as often among brick and stone masons, persons in military service, general laborers, and iron and steel operatives. Relatively high proportions are like-

wise found from such substances as acids or other chemically destructive substances in the case of the three first named groups, and also in the case of firemen (one-fourth of the blindness of plasterers and cement finishers being also from acids, etc.). When the foreign substance is dust and other foreign particles, the likelihood of blindness is especially great for iron and steel operatives, persons in military service, and agricultural laborers. Exposure to heat is extremely damaging to the eye in the case of firemen, blacksmiths and forgemen, and cooks and servants; and in only less degree in the case of engineers and cranemen, railroad workers, and iron and steel operatives. Electric light has relatively high proportions among engineers and cranemen, cooks and servants, and mechanics. To blindness from strained eyes are especially susceptible persons in professional service, clerks and stenographers, wholesale and retail dealers, and chauffeurs and teamsters, most of these groups being likely to subject their eyes to extended use.

With females, much the same observations apply as with males. Again, specific affections of the eye seem to be responsible for less blindness in manual or the unskilled occupations than in others. In certain of these diseases, especially cataract and glaucoma (and also neuralgia), there is revealed a connection with the occupations of advanced life; and in trachoma (with sore eyes), a connection with agricultural pursuits. The relatively high proportion of cataract among cooks and laundry workers is perhaps ascribable to some extent to the exposure of this group to intense heat, which may induce a special form of this disease. One-fifth (20.9 per cent) of all blindness reported among cooks is ascribed directly to exposure to heat. Glaucoma and atrophy of the optic nerve obtain particularly among persons engaged in confining indoor work, especially those in sewing and in teaching. Persons engaged in teaching also show high proportions for diseases of the iris, detachment of the retina, and corneal ulcer, as well as other of the more general affections. A relatively high proportion of blindness from accidents and from foreign substances in the eye is found for females engaged in manual work, especially for those in domestic and personal service. Blindness from "strained eyes," as with males, is the more likely to occur with persons whose work demands hard use of the eyes. Almost one-tenth (9.4 per cent) of the blindness of dressmakers and seamstresses is thus induced. The proportion here coupled with the high proportion just noted for glaucoma in the case of dressmakers and seamstresses and also in the case of teachers—the latter group more often correctly ascribing their ailment to that disease—may indicate material and direct connection between eyestrain and glaucoma.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT OCCURRENCE OF BLINDNESS ACCORDING TO PREVIOUS OCCUPATION

OCCUPATION BEFORE BLINDNESS	PER CENT OF TOTAL			
	LOSING VISION AT AGE OF—			
	20 to 24 Years	25 to 44 Years	45 to 64 Years	65 Yrs. and over
MALE				
Total.....	6.8	31.0	34.1	26.0
Farmers.....	6.6	24.2	33.0	34.2
Laborers (building and general).....	6.5	34.1	35.4	21.6
Carpenters.....	2.5	22.2	39.3	34.2
Wholesale and retail dealers.....	1.4	24.6	43.1	29.4
Professional service.....	4.5	27.2	38.2	28.3
Mine operatives (not coal).....	10.4	54.7	24.4	9.0
Agricultural laborers.....	15.6	32.8	29.4	19.0
Railroad workers.....	8.4	39.6	33.8	16.7
Chauffeurs and teamsters.....	8.5	39.7	32.8	16.2
Blacksmiths and forgemen.....	4.2	25.8	30.8	37.1
Mechanics.....	8.9	32.9	36.0	20.9
Soldiers and sailors.....	31.1	53.8	7.5	4.7
Coal mine operatives.....	10.0	40.0	33.0	14.5
Machinists and toolmakers.....	6.6	43.4	29.7	18.7
Clerks and salesmen.....	6.0	43.4	35.5	14.5
Cooks and servants.....	9.0	46.4	31.3	11.4
Painters.....	2.4	30.1	40.4	25.3
Brick and stone masons.....	4.3	13.7	46.0	33.5
Clerks and stenographers.....	10.1	39.9	34.8	12.0
Engineers and cranemen.....	2.8	27.8	43.1	25.0
Iron and steel operatives.....	7.3	42.3	31.4	15.3
Firemen.....	4.2	38.3	37.5	18.3
Manufacturers and managers.....	0.9	21.7	39.1	36.5
Shoemakers and cobblers.....	1.9	24.1	34.3	34.3
Laborers (steam and street railroad).....	3.8	38.5	44.2	10.6
Clothing and textile operatives.....	5.9	34.7	31.7	24.8
All other.....	6.4	34.8	34.9	21.7
FEMALE				
Total.....	5.5	27.4	34.7	29.6
Farmers.....	3.3	18.2	33.9	41.6
Waitresses and servants.....	7.5	34.4	32.0	23.2
Dressmakers and seamstresses.....	4.0	25.8	35.5	32.4
Teachers.....	6.0	28.4	34.1	28.4
Cooks.....	0.5	37.2	29.8	28.8
Agricultural laborers.....	13.0	21.2	33.6	30.8
Clothing and textile operatives.....	6.5	24.1	37.0	28.7
All other.....	5.9	28.2	36.9	26.2

In a consideration of the specific occupations in which persons now blind were once employed in conjunction with the age period at which their blindness occurred, there are additional means of discovering the influence which particular callings possess with respect to the safety or lack of safety of the eyesight. Where the representation at

the main or the earlier working period of life in a given calling is proportionately in excess of the total number of persons losing sight at such time, there is meant, in the absence of other intervening factors, an increased liability to eye diseases or accidents therein, or there may be said to emerge a rather definite occupational risk. In the preceding table is given the percentage distribution of the male and female blind for those occupations having 100 or more persons engaged in them, according to broad age periods at which occurred loss of sight (1920).

While among males almost two-fifths (37.8 per cent) of the loss of vision in all occupations happens in early adult life, or from twenty to forty-five, the proportion for soldiers and sailors is almost nine-tenths (and nearly one-third for those under twenty-five). The next highest proportion is for mine operatives in other than coal mines, or nearly two-thirds. Proportions of approximately one-half are found for cooks and servants, coal mine operatives, clerks and stenographers, machinists and toolmakers, iron and steel operatives, clerks and salesmen, agricultural laborers, chauffeurs and teamsters, and railroad workers. Among females, with the proportion in general practically one-third (32.9 per cent), that for waitresses and servants is a little over two-fifths, and for cooks only a little less. It is to be understood that in some of the occupations concerned the larger number of persons engaged are in the active years of life, or at a time when blindness from industrial causes may in greater or less degree be expected.

EXTENT TO WHICH BLINDNESS MAY BE PREVENTED

How much of all this blindness is it possible to prevent? Provided that we had sufficient medical knowledge and sufficient control over sanitary conditions, the answer might be said to be—nearly all of it. But in our immediate discussion of the subject we need confine ourselves only to that blindness for which there at present exists known means of practical application. Not a few cases of threatened blindness, to begin with, from one cause or another might be warded off by timely and skilled treatment, medical or surgical. Material headway could also be made, we may be sure, towards the avoidance of blindness from certain general diseases of infectious character, by the giving of proper attention. Relief may likewise be available with respect to a greater or less amount of blindness from venereal disease, which is directly responsible for a considerable portion, and indirectly for a possibly larger portion. Next, there are amenable to appropriate treatment several specific diseases of a local nature which play a

great part in the destruction of the sight. They are in the main cataract, glaucoma, ophthalmia neonatorum, and trachoma. These diseases constitute some of the leading specific causes of blindness. In large part they can be arrested, either by the employment of proper measures of prophylaxis or by prompt recourse to medical or surgical relief. The ones most readily within our control are ophthalmia neonatorum and trachoma, both preventable without great difficulty. There are two other notable eye disorders, namely, keratitis and conjunctivitis, damage from which may be avoided by comparatively simple precautions. Much may also be said to be possible in the way of prevention with respect to such complaints as atrophy of the optic nerve, ulceration of the cornea, certain forms of retinitis, etc. After these diseases there come sundry accidents and injuries to the eye of external character, including eyestrain, very many of which are preventable by the exercise of sufficient care or by the employment of proper safeguards. Finally, with respect to the large amount of blindness which is a concomitant or result of old age, or with respect to the smaller amount which arises from apparently unavoidable diseases, there would be a substantial lessening if surroundings and modes of life, or general health conditions, were in all cases improved. Such in the main are the causes of blindness of which to a greater or less extent we now seem able to gain control, or which we seem most sure of being able to arrest. Others may in part be found in some measure susceptible of prevention, though the necessary means are not so well recognized, or are at present not so available.¹

To state the exact proportion of blindness that is preventable would be a difficult matter, but considering the causes already enumerated, we may form an approximation, which need not be far astray. Following the proportions ascribed to the several causes in the census computations, we may perhaps set down as preventable all cases of ophthalmia neonatorum and trachoma (with most of the cases of "sore eyes"), or about 6 per cent; three-fourths of the remaining specific affections of the eye (together with "neuralgia"), and of the definite general diseases, or 38 per cent; four-fifths of the cases of external injuries (including strained eyes, poisoning, foreign substances in the eye, and exposure to heat), or 17 per cent; and one-half of the cases designated as indefinite and unknown (not including "sore eyes," "neuralgia," and strained eyes), or 11 per cent. Thus we find, what seems to be a fair estimate, 72 per cent, or not far from three-

¹ It has been estimated that 75 per cent of blindness is of preventable character. *Sight Saving Review*, Sept., 1933, p. 186. See also various publications of National Society for Prevention of Blindness.

fourths, of the blindness in the United States to be of preventable character.¹

¹ The percentage preventable with respect to certain diseases has been declared to be as follows: ophthalmia neonatorum, 100; optic atrophy, 75; congenital cataract, 75; corneal ulceration, 75; microphthalmus, 20; uveitis, 15; trachoma, 100; trauma, 100; keratitis, 100; chorioretinitis, 100. *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101. For other estimates as to the proportion of blindness that is preventable, see *Outlook for Blind*, i., 1907, p. 104; ii., 1908, p. 140; *Ohio State Medical Journal*, v., 1909, p. 466; *Illinois Medical Journal*, xxv., 1914, p. 75; W. C. Posey, "Hygiene of Eye," 1918, p. 238 (E. M. Van Cleve); Report of Ohio Commission for Blind, 1908, p. 22; Bulletin of United States Bureau of Labor Statistics, no. 216, 1917, p. 57; Report of National Committee for Prevention of Blindness, 1911, p. 10; 1914, p. 9; Ohio Bulletin of Charities and Correction, xv., 1909, 1, Feb., p. 28; xvii., 1911, 4, Dec., p. 21; xx., 1914, 3, July, p. 21; Bulletin of Missouri Board of Charities and Corrections, 1910, no. 2, p. 52; Report of Illinois Board of Charities, 1908, pp. 70, 213; Illinois Bulletin of Public Charities, xi., 1909, 5, Dec., p. 120; Illinois Institution Quarterly, viii., 1917, 1, March, p. 54; Report of Illinois Society for Prevention of Blindness, 1916, p. 3; Report of Ohio School for Blind, 1912, p. 50; American Encyclopedia and Dictionary of Ophthalmology, 1916, ii., p. 1170.

NOTE TO CHAPTER I.—On the subject of the causation of blindness and of its prevention, the following may be referred to (there not being included descriptions or discussions of individual cases or the treatment of particular parts of the eye, especially those of an essentially technical or anatomical character): G. E. de Schweinitz, "Diseases of Eye," ed. 1921; W. C. Posey, "Hygiene of Eye," 1918; C. H. May, "Manual of Diseases of Eye," 1930; G. M. Gould, "Biographic Clinic," 1905, ii.-vi.; Ernst Fuchs, "Causes and Prevention of Blindness," 1885; Edward Jackson, "Manual of Diseases of Eye," ed. 1907; C. A. Woods and T. A. Woodruff, "Commoner Diseases of Eye," 1907; Samuel Theobald, "Prevalent Diseases of Eye," 1906; Edward Nettlehip, "Diseases of Eye," ed. 1900; H. C. Angell, "How to Take Care of Eyes," 1878; H. D. Noyes, "Textbook on Diseases of Eye," 1890; George Lawson, "Diseases and Injuries of Eye," ed. 1903; G. A. Berry, "Manual of Practical Ophthalmology," 1889; H. R. Swanzy, "Handbook of Diseases of Eye," ed. 1925; J. E. Parsons, "Diseases of Eye," 1931; G. C. Harlan, "Eyesight and How to Care for It," 1893; Oscar Eversbusch, "Diseases of Eye in Childhood," 1914; Paul Roemer, "Textbook of Ophthalmology," 1913; C. W. Rutherford, "The Eye," 1928; International System of Ophthalmic Practice, 1910-1918; Frank Allport, "The Eye and Its Care," 1896; H. C. Parker, "Handbook of Diseases of Eye," 1910; H. W. Williams, "Our Eyes and How to Care for Them," 1871; J. M. Ball, "Modern Ophthalmology," ed. 1926; J. W. Wright, "Textbook on Ophthalmology," 1900; H. F. Hansell and W. M. Sweet, "Textbook on Diseases of Eye," 1903; P. H. Adams, "Pathology of Eye," 1912; R. B. Carter, "Good and Bad Eyesight," 1882; Ernst Fuchs, "Textbook on Ophthalmology," ed. 1917; N. B. Harman, "Preventable Blindness," 1907; L. W. Fox, "Practical Treatise on Ophthalmology," 1910; J. E. Weeks, "Treatise on Diseases of Eye," 1910; W. G. Sym, "Diseases and Injuries of Eye," ed. 1930; W. F. Norris and C. A. Oliver, "System of Diseases of Eye," 1900, ii., p. 419, and *passim*; H. O. Reik, "Safeguarding Special Senses," 1912, p. 11; D. C. McMurtrie, "Conserving Eyesight," 1911; Woods Hutchinson, "Handbook of Health," 1911, p. 250; F. P. Lewis, "Adventures in Sight Saving," 1930; F. P. Lewis, "What Eyes Mean," 1928; F. P. Lewis, "What Every One Should Know about Eyes," 1928; D. C. Watson, "Practical Handbook of Diseases of Eye," 1897; A. A. Marley, "Preventable Blindness," 1919; L. P. Maynard, "Manual of Ophthalmic Practice," 1920; E. S. Thompson, "Your Eyes and Their Care," 1929; Harry Kirkpatrick, "Diseases of Eye," 1925; A. D. Frost, "Prevention of Blindness," 1910; J. H. Waite, "Saving Eyesight after Mid Life," 1927; T. C. Atkinson, "Dangers of Ocular Diseases," 1926; Humphrey Nearne and F. A. Williamson-Noble, "Handbook of Ophthalmology," 1927; Francesque Searcy, "Mind Your Eyes," 1886; E. Meyer, "Treatise on Diseases of Eye," 1887; A. B. Norton, "Ophthalmic Diseases and Therapeutics," 1892; A. B. Norton, "Essentials of Diseases of Eye," 1904; A. L. Rea, "Affections of Eye in General Practice," 1930; H. G. Merrill and L. W. Oaks, "Your Vision and How to Keep It," 1930; F. M. Walters, "Principles of Human Control," 1916, p. 251; H. H. Moore, "Public Health in United States," 1923, p. 110; R. C. Cabot, "Layman's Handbook of Medicine," 1915, p. 457; M. M. Davis and M. C. Jarrett, "Control of Eye Diseases" (Health Inventory of New York City), 1929; John Ford, "Social Problems and Social Policy," 1923, p. 446; Federated American Engineering Societies, "Wastes in Industry,"

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CHAPTER II

BLINDNESS AND HEREDITY

EXTENT TO WHICH BLIND HAVE BLIND RELATIVES

In the problem of the prevention of blindness, our attention may first be directed to the possible effects upon it of heredity. This matter, in its wide and general implications, of which the results in blindness are but a single phase, is one to a very large extent veiled in obscurity. The factor of foremost importance in indicating the connection between a given characteristic and heredity, or the transmissibility of a given characteristic, may be expected to be that of the existence of relatives having that characteristic. Of the hereditary character of blindness some evidence would thus be fundamentally revealed in the existence of blind relatives. Hence our initial method of approach to the problem at the present is to ascertain the proportion of the blind who have blind relatives; through this procedure we may be enabled to learn what traces there may be of blindness in particular families, and in consequence in some measure to discover what are the general bearings of heredity upon the question.

Such information in the matter as we have is mainly limited to the existence of blind parents, of blind brothers or sisters, and of blind children—with the matter of blind parents there being included as well that of their possible consanguinity.¹ In the following table is given the percentage of blind persons having blind relatives—parents, brothers or sisters, and children (1910).²

¹ Statistics here relate to individual blind persons, and not to families. There are not shown the number of families having more than one blind member at one and the same time. When there is more than one return from the same family, there results a certain number of duplications, or cross references. A family having more than one member blind, whether parent, brother or sister, or child, may thus altogether present a figure above that which would otherwise be called for. In other words, the total number of blind relatives of the three classes is not necessarily as great as the sum of the number of blind parents, brothers or sisters, and children reported. In a limited proportion of cases, furthermore, the blindness reported as in another member of one's family, especially in a brother or sister, may be really chargeable to some disease of infectious character, often trachoma, a condition in which the matter of heredity is not involved at all. On the other hand, as certain forms of blindness, even though of hereditary origin, make their appearance relatively late in life, our figures, having reference only to persons actually blind at the time of the making of report, may fall considerably short of showing the extent of ultimate hereditary blindness. In some measure the foregoing influences probably serve to counteract one another.

² The statistics in this chapter, unless otherwise indicated, are from reports of the Census Bureau—"The Blind Population of the United States: 1910," 1916; "The Blind in the United States: 1910," 1917; "The Blind in the United States: 1920," 1923; "The

PERCENTAGE OF BLIND HAVING BLIND RELATIVES ACCORDING TO NATURE OF RELATIONSHIP

<i>Nature of Relationship</i>	<i>Per Cent of Total</i>
Total.....	11.0
Both parents blind.....	0.1
One parent blind.....	3.6
One or both parents blind.....	3.7
Blind children.....	0.7
Among blind having children.....	1.2
Blind brothers or sisters.....	7.8
Among blind having brothers or sisters.....	8.4

Of all the blind the proportion having blind relatives—parents, brothers or sisters, or children—is 11.0 per cent. The percentage having blind parents is 3.7 per cent—having only one blind parent 3.6 per cent, and having both parents blind 0.1 per cent. The proportion having blind brothers or sisters is 7.8 per cent—or among those having brothers or sisters at all 8.4 per cent. The proportion having blind children is 0.7 per cent—or among those having children at all 1.2 per cent.¹ The proportion is notably low for the last named group, largely for the reason that a very considerable part of the children in question have not reached an age when forces of a hereditary character have come into operation.

In the following table is given the percentage distribution of the blind having blind relatives according to the nature of the relationship (1920).

The proportion of the blind with blind relatives who have blind parents in the aggregate (alone or in combination with other relatives) is 33.3 per cent; who have blind brothers or sisters in the aggregate, 71.2 per cent; and who have blind children in the aggregate, 6.1 per cent. The proportion with blind relatives who have blind parents alone is 24.1 per cent; who have blind brothers or sisters alone, 61.4 per cent; and who have blind children alone, 4.2 per cent. The proportion having one parent blind is 32.3 per cent, and that having both parents blind 1.0 per cent. (Of the blind having blind parents, 2.9 per cent have both blind.) The proportion who have both blind parents and blind brothers or sisters is 8.7 per cent. The

Blind Population of the United States: 1920," 1928. They are based upon special reports as before indicated. Because of a large proportion of unclassifiable causes, besides some natural errors in stating family relationships, they are to be taken with considerable caution.

¹ In 1900 the proportion of the blind having blind relatives of some kind was 19.0, there being 14.9 per cent with blind ancestors or brothers or sisters, and 4.1 per cent with blind collateral relatives or descendants. In 1890 the blind having blind relatives was reported to be 19.3 per cent. "The Blind and the Deaf: 1900," 1906.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND RELATIVES ACCORDING TO
NATURE OF RELATIONSHIP

<i>Nature of Relationship</i>	<i>Per Cent Distribution</i>
Total.....	100.0
Blind parents ¹	33.3
Blind parents only.....	24.1
Blind parents and blind brothers or sisters.....	8.4
Blind parents and blind children.....	0.5
Blind parents, blind brothers or sisters, and blind children.....	0.3
Blind brothers or sisters.....	71.2
Blind brothers or sisters only.....	61.4
Blind brothers or sisters and blind parents.....	8.4
Blind brothers or sisters and blind children.....	1.1
Blind brothers or sisters, blind parents, and blind children.....	0.3
Blind children.....	6.1
Blind children only.....	4.2
Blind children and blind parents.....	0.5
Blind children and blind brothers or sisters.....	1.1
Blind children, blind parents, and blind brothers or sisters.....	0.3

proportion having both blind parents and blind children is 0.8 per cent. The proportion having both blind brothers or sisters and blind children is 1.4 per cent. The proportion having all three classes of relatives blind—parents, brothers or sisters and children—is 0.3 per cent. The number of the blind who have both parents blind being very small,² the proportion based upon such number and the proportion based upon the number having one or both parents blind would be very little different.

In the following table is given the percentage distribution, and of males and females separately, of the blind having blind parents, of those having blind brothers or sisters, and of those having blind children according to the existence of blind relatives of like kind (1920).

The proportion of the blind having a parent blind, whether one parent or both parents, is 4.2 per cent.³ The proportion having blind brothers or sisters is 9.7 per cent. The proportion having blind children is 1.7 per cent.⁴ The relatively high proportion of the blind (not far from one-tenth) with blind brothers or sisters is, perhaps, or in some respects, the most decided indication of the extent to which blindness

¹ Both parents blind, 1.0 per cent.

² Only 62 persons so reporting in 1920, and 31 in 1910.

³ Or 0.2 per cent of the entire number.

⁴ Among the blind fifteen years of age and over who have been married the proportion having blind children is 1.4 per cent.

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO EXISTENCE OF BLIND RELATIVES OF DIFFERENT KINDS

VISION OF PARENTS, BROTHERS OR SISTERS, AND CHILDREN	PER CENT DISTRIBUTION		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Total reporting as to parents.....	100.0	100.0	100.0
One or both parents blind.....	4.2	3.9	4.5
Parent not blind.....	95.8	96.1	95.5
Total reporting as to brothers or sisters.....	100.0	100.0	100.0
Blind brothers or sisters.....	9.7	9.4	10.2
Brothers or sisters not blind.....	90.3	90.6	89.8
Total reporting as to children.....	100.0	100.0	100.0
Blind children.....	1.7	1.3	2.2
Children not blind.....	98.3	98.7	97.8

prevails in certain families, or the extent to which heredity constitutes a factor in the causation of blindness—though due allowance is to be made for the possibility of acquired blindness, especially from contagious diseases, among members of the same family. The proportion with blind relatives is higher in the several cases for females; though what this may signify, we do not as yet know.

The extent of blindness in particular families is further indicated by the degree in which the blind have relatives of more than one kind, or in the correlation of blindness in one of the several groups with blindness in another. In the following table is given for those having one or both parents blind the percentage having also blind brothers or sisters, and the percentage having also blind children (1920).

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND PARENTS ACCORDING TO EXISTENCE OF BLIND RELATIVES OF DIFFERENT KINDS

VISION OF BROTHERS OR SISTERS AND CHILDREN	TOTAL	ONE OR BOTH PARENTS BLIND		NEITHER PARENT BLIND	
	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>
Total reporting as to brothers or sisters.....	100.0	100.0	4.4	100.0	95.6
Blind brothers or sisters.....	9.7	31.3	14.0	8.8	86.0
Brothers or sisters not blind.....	90.3	68.7	3.3	91.2	96.7
Total reporting as to children.....	100.0	100.0	5.3	100.0	94.7
Blind children.....	1.7	5.2	16.1	1.5	83.9
Children not blind.....	98.3	94.8	5.1	98.5	94.9

Of those blind persons having a parent blind, practically three-tenths (31.3 per cent) have in addition brothers or sisters who are blind. This proportion is almost four times as great as the corresponding proportion for those not having a blind parent but having blind brothers or sisters (8.8 per cent). Of those having a parent blind, 5.2 per cent have themselves children who are blind. This proportion is over three times as great as the corresponding proportion for those not having a parent blind but having blind children (1.5 per cent). The proportion for the blind having blind brothers or sisters and also a blind parent is considerably over four times as large as the corresponding proportion for those not having blind brothers or sisters, or 14.0 per cent as against 3.3 per cent. The proportion of the blind who have blind children and also have a blind parent is more than three times as large as the corresponding proportion for those not having blind children, or 16.1 per cent as against 5.1 per cent.

In the following table is given for blind persons fifteen years of age and over who have been married (married, widowed, or divorced) the percentage having blind brothers or sisters correlated with the percentage having blind children (1920).

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND CHILDREN ACCORDING TO EXISTENCE OF BLIND BROTHERS OR SISTERS

VISION OF CHILDREN	TOTAL	BLIND BROTHERS OR SISTERS		NO BLIND BROTHERS OR SISTERS	
	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>
Total reporting as to children.....	100.0	100.0	7.8	100.0	92.2
Blind children.....	1.7	5.9	27.4	1.3	72.6
Children not blind.....	98.3	94.1	7.4	98.7	92.6

Of those having blind brothers or sisters, 5.9 per cent have in addition children who are blind. This proportion is almost five times as large as the corresponding proportion for those not having blind brothers or sisters (1.3 per cent). The proportion of the blind who have blind brothers or sisters and who also have blind children is nearly four times as large as the proportion for those not having blind children, or 27.4 per cent as against 7.4 per cent.¹

¹ In Table I in Appendix A is given the percentage distribution of the blind, and of each sex separately, in respect to vision of parents, according to vision of brothers and sisters (1920). (In this and succeeding tables in this chapter reference is only to blind persons for

In the following table is given for the several race and nativity groups the percentage of the blind having one or both parents blind (1910 and 1920).

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND PARENTS
BY RACE AND NATIVITY

RACE AND NATIVITY	1910	1920			
	ONE OR BOTH PARENTS BLIND	TOTAL	ONE OR BOTH PARENTS BLIND		NEITHER PARENT BLIND
	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distri- bution</i>
Total.....	100.0	100.0	100.0	4.2	100.0
White.....	83.9	89.6	86.9	4.0	89.7
Native.....	71.3	74.1	75.3	4.2	74.1
Foreign born.....	12.6	15.4	11.6	3.1	15.6
Negro.....	14.1	9.7	10.5	4.5	9.6
Indian.....	....	0.7	2.5	14.1	0.7
Other colored.....	2.1	0.1	0.1	....	0.1

A somewhat larger proportion of Negroes than of whites have one or both parents blind, the percentages being, respectively, 4.5 and 4.0. The Indians have much the highest proportion, or 14.1 per cent. Native whites have a higher proportion than the foreign born, the respective percentages being 4.2 and 3.1. The high proportion for

whom report is made. Figures are taken from unpublished compilations of the United States Census Bureau.) Blind brothers or sisters are much more likely to exist when parents are blind than when they are not. Such relatives are not necessarily more likely to exist when both parents are blind than when only one is blind. A blind brother seems more likely when the father is blind, and a blind sister when the mother is blind. This is also the general tendency with males and with females alike. In Table II are given figures with respect to blindness of parent according to the existence of blind brothers or blind sisters. In Table III are given like figures as to blind sons and daughters. Such relatives are more likely to exist when one or both parents are blind than when neither is so, and much more likely when both are so. Blind daughters are much more likely when both parents are blind; but blind sons, when only one parent is blind, especially in the case of a blind father. The last named circumstance is rather accentuated among females. In Table IV are given similar figures expressing the correlation between blind brothers or sisters and blind children. Blind sons and daughters are much more likely when there are blind brothers or sisters than when there are no such relatives. The likelihood of blind brothers and sisters is greater in the case of blind sons only than in the case of blind daughters only. Such relatives are slightly more likely when there are blind sisters than when there are blind brothers, though this is not the case when there are blind daughters only. With males the likelihood of blind brothers and sisters is greater in the case of blind daughters only than in the case of blind sons only. Blind sons and daughters are more likely when there are blind sisters only than when there are blind brothers only, though this is less true when there are blind sons only or blind daughters only. With females blind sons and blind daughters are more likely when there are blind brothers only than when there are blind sisters only, though this is less true when there are blind sons only or blind daughters only. All conclusions in these several matters are to be held in abeyance till we have greater knowledge with respect to them.

Indians may be due to some extent to similar conditions in child and parent, the blindness in both being chargeable to the same cause, often trachoma. The relatively low proportion for foreign-born whites is possibly to be attributed in part to the fact that immigrants, in order to qualify for admission into the United States, must be of a rather select stock physically, and free to a relatively large extent of such pathological conditions as might lead to blindness. The large proportion of blindness among this group caused by accidents would serve somewhat to reduce the proportions of blindness of hereditary character with them. (For 1910 the proportion is notably high for other colored—largely Japanese and Chinese.)

In the following table is given the percentage of the blind who have blind children among the several race and nativity groups, and for males and females separately (1910).

PERCENTAGE OF BLIND HAVING BLIND CHILDREN BY RACE AND NATIVITY

<i>Race and Nativity and Sex</i>	<i>Per Cent of Total</i>	<i>Race and Nativity and Sex</i>	<i>Per Cent of Total</i>
Total.....	1.2	Total.....	1.2
Male.....	1.0	Colored.....	1.9
Female.....	1.5	Male.....	1.7
White.....	1.1	Female.....	2.2
Male.....	0.8	Negro.....	1.9
Female.....	1.4	Male.....	1.8
Native.....	1.2	Female.....	2.1
Male.....	1.1	Other colored.....	1.7
Female.....	1.5	Male.....	1.0
Foreign born.....	0.6	Female.....	2.8
Male.....	0.4		
Female.....	0.8		

The proportion of the blind having blind children is relatively high for Negroes, probably because of two considerations—the relatively earlier marriages among this group, and the relatively larger number in the advanced years of life—both permitting offspring to have attained an age when hereditary tendencies to blindness may have come into operation. The low proportion among the foreign born may in part simply be a reflection of the larger proportion of blindness due to accidents among them, and possibly also to the circumstance that, there being as a rule less of congenital blindness among them, their children have not in general reached the ages when diseases of hereditary character are in evidence. The lower proportion for males than for females among all groups may mean little more than the greater liability to industrial accidents among the former.

Upon the question of the extent to which blind persons have blind children certain light is afforded by studies of Dr. Clarence Loeb in

1909.¹ In all the families in which blindness of hereditary character is recorded of the children born 60.7 per cent are blind. In families where the blindness is of direct heredity, with one or both parents blind, 57.5 per cent of children are blind. In families where both parents are blind 54.8 per cent of children are blind. In families where one parent only is blind, the other having sight, 57.4 per cent of children are blind. In families where heredity is indirect—not through parents themselves, but through more remote ancestors—58.7 per cent of children are blind. In families where heredity is collateral—through cousins, or uncles or aunts—66.4 per cent of children are blind. In only 0.5 per cent of the families in which there is hereditary blindness are both parents blind; while only 0.7 per cent of all the children involved are born of such parents, or only 1.3 per cent of all the children who are blind.

To the foregoing statistics corroboration is in general lent by the statistics found in the reports of certain of the special schools for the education of blind children, though with considerable individual variations. The proportion of pupils with blind relatives seems in general to range from one-tenth to one-fourth. In some schools 1 or 2 per cent, or at times even more, of pupils have blind parents—but very often none. In the Colorado school, out of all entering pupils from 1883 to 1930, 9.3 per cent have had blind relatives.² In the Iowa school in 1904 the proportion having relatives with more or less defective vision was 26.5 per cent; of new admissions in this school in 1914 and 1915 the proportion was 23.4 per cent. In the Pennsylvania Institution of new admissions from 1912 to 1917 there were 17.7 per cent with relatives blind or having impaired sight. Of pupils entering this school each year from one-tenth to one-sixth have relatives of this character, usually brothers or sisters, or cousins, and less frequently parents or grandparents. Often approximately one-tenth have blind brothers or sisters (and at times a proportion almost as great have brothers or sisters in addition with impaired sight). Occasionally 1 or 2 per cent of pupils have more than one blind brother or sister in the same family. Not infrequently something like 5 per cent have a blind grandparent, uncle or aunt, or cousin.³ In certain schools for the blind

¹ These were based upon reports furnished by oculists and by institutions for the blind, and upon the review of medical literature on the subject, covering a period of fifty years (including both the United States and certain countries in Europe). There were 1204 families recorded, with 4155 children, 2523 children being affected. See *Annals of Ophthalmology*, xviii., 1909, pp. 1, 245, 489, 755; *St. Louis Medical Review*, lviii., 1909, p. 6; *Journal of Missouri State Medical Association*, ix., 1913, p. 234; *Outlook for Blind*, ii., 1909, p. 162; *Transactions of American Academy of Ophthalmology and Oto-Laryngology*, 1908, p. 246.

² In the North Carolina school in one year (1910), 26.6 per cent were so listed.

³ See reports of Pennsylvania Institution. See also *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101; xxv., 1928, p. 97.

there are pupils whose blind ancestors can be traced back several generations. (In a few schools there have been a number of pupils, all, respectively, the progeny of a single blind couple.) In the State of Connecticut 3.5 per cent of the blind, including adults, have blind parents, brothers, or sisters, or children.¹ In this State it has also been found that with 13.7 per cent of males and 9.1 per cent of females there is blindness in the family.²

In many schools, on the other hand, there are recorded no blind children resulting from marriages of the blind. In the Pennsylvania Institution, of 16 instances where record was kept of marriages of blind persons with the blind, there were none with blind children. Of 56 marriages recorded of former pupils of the Missouri School only 1 blind child, or 1.8 per cent, has been the issue.

In these results, in general, is readily apparent the influence of heredity upon blindness. Evidence is clear of its effects in the extent to which blindness persists in given families. This affliction shows itself in a direct line, moving from parent to offspring, and reaching out collaterally to brothers and sisters. In the same family it manifests itself not only in immediate offspring, but in others of the same flesh and blood as well—from whom it may likewise be handed down. In a particular stock the strain of blindness may be deep-seated. With it there are certain families in society markedly tinged. It passes on from generation to generation.

It is indicated at the same time that blindness when it is transmitted need not be in immediate succession, or directly from parent to child. It rather passes in general family groups. It seems about as likely when heredity is direct, with one or both parents blind, or is indirect, or is collateral. It would thus appear that in the effect upon the sight no measurably greater part is played by direct heredity than by other forms of heredity.

From what has been said there is also afforded some insight into the question of the effects in the way of the transmission of blindness of the marriages of the blind, particularly of the blind with the blind; that is, whether the likelihood of blind issue from them may be expected to be materially enhanced.³ It appears in general that the possibilities of the passing on of blindness are not appreciably increased by the contracting of marriage between persons both of whom are deprived of the sense of vision. The nearly equal proportions of children affected when both parents are blind, and when only one is

¹ Report of Connecticut Board of Education of Blind, 1926, p. 104.

² *Ibid.*, 1930, pp. 115, 117.

³ On the general subject of the marriages of the blind, see *post*, p. 203.

so (that in the latter case being in fact slightly larger according to our present statistics), may be taken to mean that the likelihood of blind offspring is not necessarily greater when both parents are without sight than when one is without it and the other with it. The explanation of the matter probably lies in the circumstance that with different pathological conditions in parents who are blind, the blindness of one being due to one affection, and that of the other to another—it being but very seldom to be expected that the disorder in both should arise from one and the same cause—the liability to the transmission of blindness should be no more marked than in the case of unions of one sighted and one blind partner.

AFFECTIONS THROUGH WHICH BLINDNESS IS TRANSMITTED

Our next task, in the consideration of the effects of heredity upon blindness, is to determine in what manner, or through what channels, the blindness that is hereditary is conveyed. This will be necessary whether we regard such blindness to be of particular forms, or as operating through particular diseases or other disorders, or whether we regard the main factors involved to be, not so much the immediate or direct transmission of blindness itself, but rather the passing on of some defect or infirmity affecting in some manner the organ of sight, or a predisposition to blindness to a greater or less extent in the existence of a certain physical condition, or an anomaly centering in the eye, or possibly one of wider ramifications which may sooner or later induce blindness, or a tendency to some disease of which blindness is but a result or symptom. In either case we shall perhaps, in a study of the effects of specific diseases upon the loss of sight, come as near as now seems possible to discovering the real clue to the problem.

In the following table is given the percentage distribution of the blind who have blind parents (and with relation to sex of parent), blind brothers or sisters, or blind children, according to the cause of blindness (only those diseases in general being included which are believed to have special hereditary significance) (1920).

By comparing the diseases having higher proportions in the case of blindness in a blind relative than in the opposite case, there may be found to some extent which diseases have an effect upon blindness through hereditary operations. With respect to parental blindness, those disorders, in the order of the apparent extent of the influence upon them of the existence of a parent who is blind—that is, in the order of the ratios between the proportions of the blind having a blind parent and the proportions not having a blind parent—are as follows: progressive myopia, retinitis pigmentosa, detachment of the retina,

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND PARENTS, BROTHERS OR SISTERS OR CHILDREN, ACCORDING TO CAUSE OF BLINDNESS

CAUSE OF BLINDNESS	TOTAL	PER CENT DISTRIBUTION								
		PARENTS					BROTHERS OR SISTERS		CHILDREN	
		One or Both Parents Blind	One Parent Only Blind		Parent Not Blind	Blind Brothers or Sisters	Brothers or Sisters Not Blind	Blind Children	Children Not Blind	
			Total	Father Blind						
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Specific affection of eye.....	38.6	52.1	52.8	52.1	53.5	38.0	41.8	37.9	42.0	42.0
Diseases of conjunctiva.....	6.1	3.8	3.6	4.3	2.9	6.1	4.4	5.6	4.0	4.0
Trachoma (granular eyelids).....	1.6	2.3	2.1	2.7	1.6	1.5	1.9	1.6	3.0	3.0
Ophthalmia neonatorum.....	3.3	0.6	0.5	0.6	0.4	3.4	1.8	2.8	0.3	0.3
All other.....	1.2	0.9	1.0	1.0	0.9	1.2	0.8	1.2	0.7	0.7
Diseases of cornea.....	1.2	0.9	1.0	0.9	1.0	1.2	0.9	1.1	1.0	1.0
Diseases of iris.....	0.7	0.4	0.4	0.7	0.1	0.7	0.2	0.8	...	...
Diseases of choroid.....	0.2	0.2	0.1	...	0.3	0.2	0.5	0.1	...	...
Glaucoma.....	5.4	9.1	9.3	8.2	10.5	5.3	5.1	5.6	6.0	6.0
Diseases of retina.....	1.4	1.6	1.8	1.8	1.4	1.7	1.4	1.7	1.7	1.7
Retinitis pigmentosa.....	0.1	0.3	0.3	0.3	0.3	0.1	0.6	0.1	...	...
Retinitis hemorrhagica.....	0.3	0.2	0.2	0.3	0.1	0.3	0.1	0.3	0.7	0.7
Detachment of retina.....	0.5	0.9	1.0	0.9	1.0	0.5	0.5	0.5	0.3	0.3
All other.....	0.5	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.7	0.7
Diseases of optic nerve.....	6.9	6.6	6.7	6.4	7.1	6.9	7.7	6.9	6.3	6.3
Atrophy of optic nerve.....	4.9	4.9	5.0	4.5	5.4	4.9	5.2	5.0	4.3	4.3
All other.....	2.0	1.6	1.8	1.9	1.6	2.0	2.5	2.0	2.0	2.0
Cataract.....	13.7	25.4	25.8	26.2	25.5	13.2	17.3	13.4	19.7	19.7
Amaurosis and other disturbances of vision.....	0.2	0.2	0.1	0.1	...	0.2	0.7	0.1	0.3	0.3
Progressive myopia.....	0.3	0.9	0.9	0.3	1.5	0.3	0.6	0.3	0.3	0.3
Cancer and other neoplasms.....	0.7	0.4	0.4	0.3	0.4	0.7	0.2	0.8	0.7	0.7
All other diseases of eye.....	0.6	0.4	0.3	0.3	0.3	0.6	1.0	0.5	0.7	0.7
Combination of two or more diseases of eye.....	1.3	2.3	2.3	2.5	2.1	1.2	1.4	1.3	1.3	1.3
Diseases other than specific affection of eye.....	15.7	9.4	9.3	9.1	9.4	16.0	11.2	16.6	13.0	13.0
Diseases of head other than meningitis.....	1.1	0.5	0.4	0.3	0.6	1.1	0.6	1.1	0.3	0.3
Rheumatism.....	0.5	0.1	0.1	0.1	...	0.5	0.2	0.6	0.3	0.3
Syphilis.....	0.5	0.1	0.1	0.1	...	0.5	0.3	0.5	...	...
Locomotor ataxia.....	0.2	0.2	0.1	...	0.3	0.2	0.1	0.2	0.7	0.7
All other general diseases.....	13.4	9.1	8.5	8.5	8.5	13.7	10.0	14.2	11.7	11.7
Accident or other injury (including sympathetic ophthalmia).....	16.5	9.0	8.1	9.4	6.8	16.9	5.6	17.9	9.7	9.7
Malformations.....	0.4	0.4	0.4	0.1	0.6	0.4	0.9	0.3	...	...
All other definitely reported causes.....	2.3	1.5	1.5	1.5	1.5	2.4	0.5	2.5	1.0	1.0
Causes indefinitely or inaccurately reported.....	25.5	27.9	27.3	26.9	27.7	25.3	39.4	23.8	32.3	32.3
Congenital (cause not stated).....	7.4	7.5	7.0	7.9	6.0	7.3	22.8	5.2	4.7	4.7
Old age.....	2.2	3.3	3.2	2.2	4.1	2.0	1.5	2.2	3.3	3.3
Neuralgia.....	1.5	1.6	1.9	1.5	2.2	1.5	1.9	1.6	3.7	3.7
Exposure to heat.....	1.4	1.6	1.6	1.2	1.9	1.4	1.0	1.5	2.0	2.0
Sore eyes.....	1.4	1.6	1.6	1.2	1.9	1.4	1.4	1.4	3.0	3.0
All other.....	11.6	12.3	12.2	12.9	11.5	11.7	10.8	11.9	15.7	15.7
Combination of different classes of causes.....	0.9	0.9	0.7	0.9	0.6	0.9	0.7	1.0	2.0	2.0

cataract, glaucoma, old age, trachoma, neuralgia, exposure to heat and sore eyes. The respective proportions are as three to one with the first two affections named, and as two to one with the third. With respect to congenital blindness the two proportions are not very different. The affection showing the least hereditary influence is syphilis.

¹ Congenital syphilis is rather frequent. Results as to syphilis are to be taken with special caution. With modern blood tests greater knowledge is now possible with respect to its hereditary aspects.

proportions when one or both parents are blind and when only one is so are little different. The greatest excess in the former case is in congenital blindness, or 7.5 per cent as against 7.0.

In all the disorders mentioned, trachoma and cataract show a larger proportion when it is the father who is the blind parent. In the case of glaucoma, progressive myopia, atrophy of the optic nerve, old age, neuralgia, exposure to heat, and sore eyes, there are larger proportions for a blind mother. (With the remaining disorders the proportions are practically identical.)

The results as to the hereditary character of most of the foregoing disorders confirm what has already been known in greater or less detail. The hereditary bearing of cataract, glaucoma, the two retinal affections, especially retinitis, pigmentosa, and progressive myopia, have been duly recognized in scientific inquiry. There are in fact known to be several different forms of cataract of hereditary character.¹ Neuralgia, as has already been indicated, is often erroneously reported as glaucoma. Blindness attributed to old age, as also previously observed, is really in great measure to be charged to cataract and glaucoma, both these diseases operating largely at that time of life (though not a certain form of cataract exposure to heat has some connection). The representation of both cataract and glaucoma among the affections of hereditary nature would be considerably enlarged but for the fact that they occur so often in the later years of life, or subsequently to the reporting. Trachoma, together with sore eyes, being an infectious disease, may spread among several members of the same family without the involving of any hereditary factors.

The reasons for the variations in the proportions for certain affections as between a blind father and a blind mother are at present not altogether clear. To an extent the differences are due to the relatively greater prevalence of some affections with one sex than with the other. These may account in part at least for the larger proportion for glaucoma, together with neuralgia and old age, in the case of females, because of their greater general longevity.

With respect to blindness in brothers or sisters, the causes showing the different proportions in the case where such relatives exist than in the opposite case are for the most part specific affections of the eye. In such disorders, in the order of the relative differences in the respective proportions, are amaurosis and other disturbances of vision, retinitis, pigmentosa, diseases of the choroid, progressive myopia, cataract, trachoma, and atrophy of the optic nerve (besides other affections of the optic nerve). An excess in the proportions where blind brothers

¹See *American Journal of Ophthalmology*, xxi., 1904, p. 74.

or sisters exist is shown also for malformations and neuralgia, and for congenital causes not otherwise stated, in the latter case the ratio between the respective proportions being as four to one.

With respect to blindness in children, the figures are not so conclusive as the preceding ones, though larger proportions where blind children are reported are seen in certain cases. The excess does not appear in any of the general classes of causes except locomotor ataxia and those indefinitely or inaccurately reported. Definite disorders, however, in which there are larger proportions when blind children are reported than when they are not are amaurosis, sore eyes, trachoma, retinitis hemorrhagica, cancer and other neoplasms, diseases of the cornea, and cataract. The difference is greatest, however, in the case of congenital blindness, the proportion in the one case being almost six times as large as in the other.

In the combination or in the correlation of the results with respect to the three categories of blind relatives just considered there may appear the general bearings of heredity upon the different disorders responsible for blindness. On the whole, a not inconsiderable though limited degree of similarity is manifested in the results for the several groups. With most of the causes the amount of blindness does not seem to be greatly affected by the existence of blind relatives. The causes found to operate the more extensively among persons with blind relatives, and consequently showing most clearly their hereditary nature, are chiefly specific affections of the eye, particularly of the crystalline lens and retina, and in addition amaurosis and myopia, and to a less extent affections of the optic nerve, choroid, and cornea. General diseases are for the most part without effect in the matter except neuralgia, closely allied to glaucoma. The leading exceptions are diseases of venereal origin.

Only three disorders of hereditary tendencies are found with all three classes of blind relatives—cataract, neuralgia, and trachoma. The importance of heredity as a factor in the causation of blindness from cataract is here accentuated. Neuralgia is in large part erroneously reported for glaucoma, as already stated, and the hereditary influences of that disease are attested anew. Both cataract and glaucoma would show more pronounced hereditary tendencies but for the fact that they are frequently of late appearance, or at a time of life which has not as yet been attained. Trachoma is largely reported where relatives are blind, not because of any hereditary propensities in its case, but because of its prevalence among several different members of one family, all having it as a result of infection.

Progressive myopia and retinitis pigmentosa are in two categories,

those for parents and those for brothers or sisters. Like cataract and glaucoma, both of these disorders might indicate more fully their hereditary connection if they occurred more often in the early years of life, or with respect to children. In two categories, those for parents and those for children, is sore eyes. This complaint is in no small part trachoma, and its presence is to be explained very largely by infection. Amaurosis and causes reported as congenital without further designation appear in two categories, those of brothers or sisters and those of children. In both these relationships the influences of hereditary action are striking.

The remaining disorders specified as having larger proportions in the case of blind relatives than in the opposite case are found each in but a single category. With respect to blindness of a parent only are set down detachment of retina, glaucoma, old age, and exposure to heat; with respect to brothers or sisters only, diseases of the choroid, malformations, and atrophy of the optic nerve (and other affections of the optic nerve); and with respect to children only, locomotor ataxia, retinitis hemorrhagica, cancer and other neoplasms, and diseases of the cornea.

The extent of hereditary influences upon certain of the disorders enumerated, or even the inclusion of one or two in any degree, may be a matter of some uncertainty, especially in view of the small numbers sometimes involved, a circumstance that serves to deprive them of the fullest significance, and to prevent the indication of more decided leanings. In certain cases, also, the differences in the two sets of proportions—the proportion indicating the presence of blind relatives and the proportion where there are none—are very small. Again, increased proportions for some disorders in the case of blind relatives are the reflections of smaller proportions for others, generally of non-hereditary character. On the other hand, some disorders would doubtless display more decided hereditary tendencies if these had developed at an earlier stage in life, or at a time when report as to them was possible.

In the following table is given the percentage of the blind having blind parents, blind brothers or sisters, and blind children, according to particular causes of blindness, especially specific affections of the eye (1910 and 1920).

Here the results of the preceding table are in great measure confirmed. In the case of blind parents there are relatively large proportions (above the average) with cataract (almost two times), glaucoma, neuralgia, and atrophy of the optic nerve; in the case of blind brothers or sisters, with trachoma, cataract, neuralgia, malformations (over two times), and congenital blindness (over three times); and in the

PERCENTAGE OF FAMILIES AFFECTED WITH BLINDNESS HAVING BLIND CHILDREN
ACCORDING TO CAUSE

CAUSE OF BLINDNESS	TOTAL		DIRECT HEREDITY— BOTH PARENTS AFFECTED		DIRECT HEREDITY— ONE PARENT AFFECTED		INDIRECT HEREDITY		COLLATERAL HEREDITY	
	<i>Per Cent Distribution of Families Affected</i>	<i>Per Cent of Children Affected</i>	<i>Per Cent Distribution of Families Affected</i>	<i>Per Cent of Children Affected</i>	<i>Per Cent Distribution of Families Affected</i>	<i>Per Cent of Children Affected</i>	<i>Per Cent Distribution of Families Affected</i>	<i>Per Cent of Children Affected</i>	<i>Per Cent Distribution of Families Affected</i>	<i>Per Cent of Children Affected</i>
Total.....	100.0	60.7	100.0	54.8	100.0	57.4	100.0	58.7	100.0	66.4
Myopia.....	1.1	38.3	.....	.....	0.7	11.8	0.0	0.0	2.2	48.8
Cataract and coloboma.....	6.0	73.9	.....	.....	8.2	74.6	3.6	66.7	2.5	74.2
Microphthalmus and microphthalmus.....	4.0	74.4	.....	.....	3.6	70.2	2.7	100.0	5.2	76.8
Atrophy of optic nerve.....	12.4	61.6	.....	.....	6.4	46.6	38.0	60.0	16.8	70.6
Ectopia lentis.....	33.6	57.1	50.0	60.0	42.1	58.2	25.7	42.1	18.7	61.8
Family degeneration of lens.....	5.3	73.1	.....	.....	6.0	70.3	2.7	50.0	5.0	88.8
Glaucoma.....	2.6	54.4	.....	.....	2.5	41.9	0.9	100.0	3.6	68.0
Strabismic.....	4.8	56.2	.....	.....	6.1	55.0	0.9	40.0	3.6	62.2
Phthisis.....	0.7	75.0	.....	.....	0.1	100.0	0.0	0.0	1.9	74.1
Albinism.....	2.6	61.5	.....	.....	2.5	46.4	2.7	100.0	2.5	72.5
Ophthalmoplegia and ptosis.....	3.2	64.9	16.7	50.0	4.4	63.6	0.9	100.0	1.4	76.5
Retinitis pigmentosa.....	23.7	59.5	33.3	50.0	17.4	50.6	22.1	73.2	36.6	64.5

both parents affected, there are concerned only three diseases—cataract, retinitis pigmentosa, and ophthalmoplegia and ptosis—though the numbers here are perhaps too small to allow very much importance to be attached to them. In cataract the influence of heredity seems to be the more pronounced the more intimate its form, the proportion for direct heredity with both parents affected being 50.0 per cent, for direct heredity with but one affected 42.1 per cent, for indirect heredity 25.7 per cent, and for collateral heredity 18.7 per cent. In retinitis pigmentosa rather the opposite tendency is the case, the respective proportions for the four forms being 33.3 per cent, 17.4 per cent, 22.1 per cent, and 36.6 per cent. With atrophy of the optic nerve the greatest proportion occurs in relation to indirect heredity, being 38.0 per cent, or nearly two-fifths of the cases of such heredity, while the proportions for direct heredity with one parent affected and for collateral heredity are, respectively, 6.4 per cent and 16.8 per cent. The proportions for aniridia and coloboma iridis, ectopia lentis, glaucoma, and ophthalmoplegia and ptosis are greatest in relation to direct heredity; for nystagmus, in relation to indirect heredity; and for albinism, anophthalmus and microphthalmus, family degeneration of the lens, and megalophthalmus, in relation to collateral heredity.

With respect to the effect of the several diseases on the offspring of these families, the disparity in the results is somewhat greater. The proportion affected of the entire number of children is 60.7 per cent, ranging from 38.3 per cent for albinism to 75.0 per cent for megalophthalmus. The proportions for the three most important diseases, namely, cataract, retinitis pigmentosa, and atrophy of the optic nerve, are nearly equal, being close to three-fifths in each case (57.1 per cent, 59.5 per cent, and 61.6 per cent, respectively). In cataract the lowest ratio is shown in relation to indirect heredity, which is but little over two-fifths (42.1 per cent), the ratios for direct heredity with both parents blind, for direct heredity with but one parent blind, and for collateral heredity being, respectively, 60.0 per cent, 58.2 per cent, and 61.8 per cent. In retinitis pigmentosa, on the other hand, there is a very high ratio for indirect heredity (73.2 per cent), and low ratios for direct heredity (50.0 per cent where both parents are blind, and 50.6 per cent where only one is so), the remaining ratio for collateral heredity being nearly normal (64.5 per cent). In atrophy of the optic nerve the ratio increases with the remoteness of the kinship, being 46.6 per cent for direct heredity with one parent affected, 60.0 per cent for indirect heredity, and 70.6 per cent for collateral heredity. The proportions are greatest for direct heredity in aniridia and coloboma iridis and megalophthalmus, for indirect heredity in anophthalmus and microphthalmus, family degeneration of cornea, nystagmus, and ophthalmoplegia and ptosis, and for collateral heredity in albinism, ectopia lentis, and glaucoma.

The diseases which have been enumerated probably represent nearly all having a part in hereditary blindness.¹ Others which have been added are: optic neuritis (retro-bulbar neuritis); macular and other degeneration of the retina; nodular and reticular opacities of the cornea; syphilis in the form of interstitial keratitis; retinitis punctata albescens; distichiasis; buphthalmus (microphthalmus); certain forms of choroiditis; certain forms of iritis; certain forms of glioma; certain forms of amertropia; amaurosis from certain degeneration; blindness from idiocy; myopia and astigmatism (not necessarily constituting full blindness).²

¹ Of the blindness among pupils in attendance at schools for the blind in Missouri (State institution and day schools in St. Louis), 25.1 per cent has been found to be of hereditary character—the percentage for different diseases being as follows: congenital cataract, 9.0; hydrophthalmus, 5.1; microphthalmus, 4.0; retinal degeneration, 4.0; retinitis pigmentosa, 1.5; anophthalmus, 0.5; aniridia, 0.5; dislocation of lens, 0.3; coloboma of iris, 0.2. *Journal of Missouri State Medical Association*, xxv., 1928, p. 100.

² By the Section on Ophthalmology of the American Medical Association there has been prepared a bibliography of references to more than 700 cases of hereditary eye defects, involving 1000 or 1200 families. In about 160 of the cases there is cataract or ectopia lentis; in 90, optic atrophy; and in nearly 50, blindness with insanity or allied conditions.

The hereditary bearings of some of the affections indicated are discovered to be pronounced; and their part in the causation of blindness is clear. Indeed, "in all the diseases, defects, or anomalies of the body, no better or more sharply-defined examples of heredity are to be found than in the human eye."¹

It appears at the same time that the diseases which we have now considered constitute the real factors in the action of heredity upon blindness. So far as we are able to ascertain, it is through them only that hereditary forces operate, and it is they which furnish the true key to the situation. They, it seems, represent the forms to which is confined such blindness as is transmissible. Beyond them, "the entire range of ocular diseases is free from hereditary influence."²

For just how much blindness of a hereditary character the diseases in question are responsible, we cannot know with exactness. The total amounts ascribed to each added together do not reach 30 per cent of all; that is, the affections of the eye susceptible in any way of hereditary influence are jointly chargeable with less than three-tenths of blindness. This, however, is to be regarded as but the outside limit. From it there must be deducted a considerable proportion attributed to these affections, of non-hereditary origin. The amount actually transmitted we may thus believe to be much less than that indicated. Possibly it does not exceed 10 per cent.³

TRANSMISSIBLE BLINDNESS ACCORDING TO AGE AT OCCURRENCE

In the following table is given the percentage distribution of the blind who have blind parents according to the age at the loss of sight (1910 and 1920).

Other cases include hemeralopia, glaucoma, microphthalmus, retinitis pigmentosa, etc. In about one-third of the cases the defect in one or both eyes is sufficient to bring it within the definition of blindness. Eugenics Record Office, Bulletin 21, 1921, Bibliography of Hereditary Eye Defects (Lucien Howe). There have been found to be 34 defects of the eye, including the lids and muscles, of hereditary character, and liable to produce practical blindness, direct or indirect, the chief being corneal degeneration, persistent pupillar membrane, certain forms of cataract, glaucoma, and retinitis pigmentosa. *Journal of American Medical Association*, lxxiii., 1924, p. 270. On the several eye affections of hereditary character, see in particular Arnold Knapp, "Medical Ophthalmology" (International System of Ophthalmic Practice), 1916, p. 461; C. B. Davenport, "Heredity in Relation to Eugenics," 1911, p. 107; American Encyclopedia and Dictionary of Ophthalmology, 1916, viii., p. 5812; *Ophthalmology*, ix., 1913, p. 165; *Ophthalmoscope*, iv., 1906, pp. 145, 493. *Eugenical News*, xiii., 1928, p. 86.

¹ American Encyclopedia and Dictionary of Ophthalmology, viii., 1916, p. 5876.

² Clarence Loeb, *loc. cit.*, p. 8.

³ See *ibid.*, p. 6. Another estimate is about one-twelfth. *Journal of American Medical Association*, lxxiii., 1924, p. 270. Of pupils in schools for the blind in the United States (1930), 28.6 per cent are blind from hereditary or congenital causes. *Sight Saving Review*, Sept., 1933, p. 194. By professors of diseases of the eye in certain medical schools, it is stated that the effect of heredity upon blindness in general is not great.

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND RELATIVES ACCORDING TO A
LOSS OF SIGHT

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION									
	1910					1920				
	TOTAL	ONE PARENT ONLY BLIND			PARENTS NOT BLIND	TOTAL	BOTH PARENTS BLIND	ONE PARENT ONLY BLIND		
		Total	Father Blind	Mother Blind				Total	Father Blind	Mother Blind
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Born blind.....	6.5	4.8	6.3	3.5	6.5	10.0	29.3	10.3	11.9	8.7
Not born blind.....	93.5	95.2	93.7	96.5	93.5	90.0	70.7	89.7	88.1	91.3
Losing vision at age of—										
Less than 20 years..	23.5	8.0	9.8	6.4	24.4	26.7	20.7	11.9	11.6	12.1
Less than 1 year..	4.9	0.5	0.6	0.4	5.1	5.6	7.0	1.0	1.3	0.8
1 year.....	1.2	0.2	0.2	0.2	1.3	1.4	1.7	0.3	0.3	0.4
2 to 4 years.....	3.5	1.8	2.5	1.2	3.6	4.0	3.4	2.2	2.3	2.2
5 to 9 years.....	5.2	1.6	1.3	2.0	5.4	6.2	1.7	2.9	2.3	3.6
10 to 14 years.....	4.2	2.1	2.9	1.4	4.3	4.6	5.2	2.6	3.1	2.0
15 to 19 years.....	3.9	1.7	2.3	1.2	4.1	3.5	1.7	1.9	1.7	2.2
Indefinite.....	2.8	0.7	0.8	0.5	2.1	1.4	....	0.9	0.8	1.0
20 years or over.....	67.9	86.6	83.1	89.5	67.6	63.3	50.0	77.9	76.5	79.2
20 to 24 years.....	4.3	1.7	2.9	0.7	4.4	3.9	....	2.2	2.8	1.5
25 to 44 years.....	18.5	15.9	16.0	15.1	18.8	17.5	18.9	13.5	15.6	11.5
45 to 64 years.....	23.7	30.9	26.8	34.4	23.6	22.2	12.2	31.6	30.3	32.9
65 years or over ..	21.4	38.0	36.4	39.4	20.7	19.7	18.9	30.6	27.8	33.4

Only a slightly greater chance exists of a child being congenitally blind when a parent is blind than when a parent is not blind. Of blind persons with a blind parent (1920) 10.3 per cent are born blind, while of persons not having blind parents 9.8 per cent are born blind. (When both parents are blind, three-tenths (29.3 per cent) are blind.) Heredity would thus seem to have but little connection with blindness existing from birth, or congenital blindness. Most of the effects of heredity are manifest at later stages of life.

If there is a blind parent, the proportion of congenitally blind is greater when it is a blind father than when it is a blind mother, the respective percentages being 11.9 and 8.7.

As already stated, there appears a somewhat greater likelihood of blindness in a blind parent when blindness occurs in adult life than when it occurs at a younger period. Of those having a parent blind, 77.9 per cent lost their sight at twenty or over and 11.9 per cent under that age, while of those not having a parent blind the respective proportions are 63.0 per cent and 27.2 per cent. In fact, the higher the age at loss of sight the greater seems the likelihood of the existence of a blind parent. With blindness occurring in late middle life or old age the proportions are materially higher for those having a blind parent than for those not having a blind parent. While a little over two-fifths (62.2 per cent) of the blind with a blind parent lost sight at forty-five or over, only a little over two-fifths (41.1 per cent) of

ut a blind parent lost it at such age. This situation is doubtless
ge part to be accounted for by the appearance late in life of
n diseases of apparently hereditary nature, notably cataract
laucoma. When both parents are blind a relatively larger pro-
n lost sight in the earlier period, the proportion losing it under
y being one-fifth (20.7 per cent).

ferences in the proportions as to age are in no small part to be
ned by the circumstance, already noted, that in many instances
blindness occurs in successive generations of the same family,
ccasioned by certain diseases which affect the sight after middle
n particular cataract.

en blindness occurs before middle age and a blind parent is
red, such parent is somewhat more likely to be the father; when
ness occurs at a later time, the parent is more likely to be the
er. The matter is with little doubt affected by the fact, on the
and, that females suffer to a greater extent than males from
oma, a disease of hereditary character and manifesting itself
late in life, and by the fact, on the other hand, that females
ally live to a relatively older age than males, or to a time when
rder such as glaucoma may operate.

the following table is given the percentage of the blind with
parents who are and who are not congenitally blind (1920).¹

PERCENTAGE OF CONGENITALLY BLIND HAVING BLIND PARENTS

DIVISION OF PARENTS	TOTAL	CONGENITALLY BLIND		NOT CONGENITALLY BLIND	
	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>
Total.....	100.0	100.0	10.0	100.0	90.0
both parents blind....	4.0	4.5	10.3	4.0	89.7
not blind.....	96.0	95.5	9.8	96.0	90.2

e proportion of the blind with blind parents (one or both) who
ngenitally blind and who are not congenitally blind are but little
ent, that for the former being slightly greater, or 4.5 per cent as
st 4.0 per cent.²

h respect to congenital blindness emphasis is often to be placed upon the matter of
ic infection.

900 of all the congenitally blind 29.0 per cent had blind relatives, in contrast to
r cent for all the blind. While the proportion of all the blind whose blindness
ngenital was 7.3 per cent, it was 12.5 per cent for those with blind relatives. Sta-
with respect to congenital blindness are unsatisfactory, and to some extent unreli-
Congenital blindness is set down as a cause of blindness only when no specific
an be determined, possibly representing only about one-half of the blindness re-

In the following table is given the percentage distribution of the blind having blind children according to age of loss of sight (1910).

PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND CHILDREN ACCORDING TO AGE AT LOSS OF SIGHT

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION		
	<i>Total</i>	<i>Blind Children</i>	<i>Children Not Blind</i>
Total.....	100.0	100.0	100.0
Born blind.....	0.8	8.7	0.7
Not born blind.....	99.2	91.3	99.3
Losing vision at age of —.....			
Less than 20 years.....	6.6	10.8	6.5
Less than 1 year.....	0.7	1.0	0.7
1 year.....	0.3	....	0.3
2 to 4 years.....	0.8	3.6	0.7
5 to 9 years.....	1.5	2.1	1.5
10 to 14 years.....	1.4	0.5	1.5
15 to 19 years.....	1.8	3.6	1.8
Indefinite.....	0.1	....	0.1
20 years or over.....	91.0	77.9	91.2
20 to 24 years.....	3.2	3.1	3.2
25 to 44 years.....	21.7	24.1	21.7
45 to 64 years.....	33.4	27.7	33.6
65 years and over.....	32.6	23.1	32.7
Unknown.....	1.6	2.6	1.5

A much larger proportion of the blind having blind children were born blind than of the blind not having blind children, or 8.7 per cent as against 0.7 per cent. A larger proportion also of the former lost sight in childhood and youth, but a smaller proportion in the later years of life. (Still to not less than half of the blind with blind children blindness occurred after forty-five.)

BLINDNESS IN RELATION TO CONSANGUINITY OF PARENTS

Akin to, or perhaps rather a part of, the question of the effect of heredity upon blindness is that of the effect thereupon of consanguineous marriages. This comes chiefly from a certain decided tendency for a defect, physical or mental, to which there may be a family predisposition, even though of a latent character, and not found in the parents themselves, to appear in the offspring of such marriages; or, in short, from the increased tendency for a given defect to be transmitted as the result of such marriages. With respect to blindness this effect is revealed in greater or less measure by the extent to which ported as existing from birth. Some persons reported as born blind became so very shortly after birth; others born blind were not so discovered till somewhat later, and were wrongly reported as born blind. Some blindness, furthermore, reported as congenital is really due to causes operating at birth, possessing little hereditary significance.

blind persons have parents who are cousins—and all the more by the extent to which blind persons with blind relatives have such parents.

In the following table is given, for the several race and nativity classes of the United States, the percentage of the blind having parents who are first cousins and the percentage distribution among the different classes (1910 and 1920).

PERCENTAGE OF BLIND HAVING PARENTS COUSINS

RACE AND NATIVITY	1910		1920				
	PARENTS FIRST COUSINS		TOTAL	PARENTS FIRST COUSINS		PARENTS NOT FIRST COUSINS	
	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>
Total.....	100.0	2.5	100.0	100.0	2.1	100.0	97.9
White.....	96.1	2.8	89.8	96.8	2.3	89.6	97.7
Native.....	89.0	3.2	74.4	88.3	2.5	74.1	97.5
Foreign born.....	7.1	1.1	15.4	8.5	1.2	15.6	98.8
Negro.....	2.7	0.6	9.5	2.4	0.5	9.7	99.5
Indian.....	....	....	0.6	0.7	2.4	0.6	97.6
Other colored.....	1.3	4.2	0.1	....	....	0.1	....

Of all the blind 2.1 per cent have parents who are cousins (2.5 per cent in 1910).¹ This proportion is probably considerably in excess of that for the population in general.² For the several classes the order is as follows: native whites (2.5 per cent), Indians (2.4 per cent), foreign-born whites (1.2 per cent), and Negroes (0.5 per cent). The reasons for the differences among the several groups are not clear, beyond the general likelihood that the proportion would be comparatively small for the foreign born.³

In the following table is given, according to whether parents are or are not first cousins, the percentage having blind relatives (1910).

Of the blind having parents who are first cousins, 37.5 per cent have blind relatives, as compared with 11.0 per cent for the blind in general. Though persons whose parents are so related constitute 2.5 per cent of the blind, they constitute 8.3 per cent of the blind having blind relatives. In other words, the proportion of the blind with blind

¹ In 1900 this was 4.5 per cent.

² The proportion of marriages in general in the United States which are consanguineous does not average over 1 per cent. It varies from 0.5 per cent to 5 per cent, the latter proportion being found only in isolated areas. If consanguineous marriages include those of both first and second cousins, the proportion is probably between 2 per cent and 2.5 per cent. Consanguineous marriages are relatively decreasing. G. B. L. Arner, "Consanguineous Marriages in United States," 1908.

³ Possibly less full returns are received from Negroes.

PERCENTAGE OF BLIND HAVING BLIND RELATIVES ACCORDING TO RELATIONSHIP OF PARENTS

VISION OF RELATIVES	TOTAL	PARENTS FIRST COUSINS		PARENTS FIRST COUSINS
	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>
Total.....	100.0	100.0	2.5	100.0
Having blind relatives.....	11.0	37.5	8.3	10.9
Not having blind relatives.....	89.0	62.5	1.7	89.1

relatives is over three times as great among those whose parents are first cousins as it is among the blind as a whole.¹

In the following table is given the percentage distribution of blind whose parents are first cousins and who have blind relatives according to the nature of the relationship (1910).

PERCENTAGE OF BLIND HAVING BLIND RELATIVES AND HAVING PARENTS FIRST COUSINS ACCORDING TO NATURE OF RELATIONSHIP

NATURE OF RELATIONSHIP	TOTAL	PARENTS FIRST COUSINS
	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>
Total.....	100.0	100.0
One or both parents blind.....	33.3	10.5
No other blind relatives.....	24.1	5.6
Other blind relatives.....	9.2	4.9
Both blind children and blind brothers or sisters..	0.3	....
Blind children only.....	0.5	....
Blind brothers or sisters only.....	8.4	4.9
No blind parent.....	66.7	89.5
Both blind children and blind brothers or sisters....	1.1	1.1
Blind children only.....	4.2	0.4
Blind brothers or sisters only.....	61.4	88.0

Parents appear the more likely to have been cousins in the case of blind brothers or sisters than in other cases—doubtless but a demonstration of the latent character of the affection, not necessarily appearing in a direct line.

Of the blind with blind relatives, most have blind brothers or sisters, 94.0 per cent having such in conjunction with other relatives.

¹ Of the offspring of consanguineous marriages, only 0.25 per cent are blind, and 0.05 per cent are congenitally so. Contrasted with the ratio for the general population the chances of such offspring are 632 per million when the parents are first cousins and 196 per million when they are not related, G. B. L. Arner, *op. cit.*, p. 64.

er cent such alone; while only 10.5 per cent have blind parents, 6 per cent having such alone; and only 0.4 per cent have blind n.¹

ne following table is given, according to whether or not parents t cousins, the percentage of the blind having one or both par- ind, having blind brothers or sisters, and having blind children g married, widowed, and divorced) (1920).

AGE OF BLIND HAVING BLIND PARENTS, BROTHERS OR SISTERS, AND CHILDREN

N OF PARENTS, BROTHERS OR SISTERS, AND CHILDREN	TOTAL	PARENTS FIRST COUSINS		PARENTS NOT FIRST COUSINS	
	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent of Total</i>
total.....	100.0	100.0	2.1	100.0	97.9
both parents blind.....	4.1	4.4	2.3	4.1	97.7
parent blind.....	95.9	95.6	2.1	95.9	97.9
g brothers or sisters, total.....	100.0	100.0	2.2	100.0	97.8
others or sisters.....	9.7	39.4	8.8	9.0	91.2
brothers or sisters.....	90.3	60.6	1.4	91.0	98.6
g children, total.....	100.0	100.0	1.3	100.0	98.7
children.....	1.6	2.3	1.9	1.6	98.1
children.....	98.4	97.7	1.3	98.4	98.7

re is a larger proportion of the blind in each of these groups parents are first cousins than when they are not. The difference test in the case of blind brothers or sisters, the proportion in rmer case being over four times the proportion in the latter, 4 per cent as against 9.0 per cent. With a parent blind the nce between the two cases is slight, or 4.4 per cent in the one inst 4.1 per cent in the other. With children blind the proportion one case is 2.3 per cent, as against 1.6 per cent in the other. proportion of the blind having blind brothers or sisters and also g parents who are cousins is six times as great as the correspond- proportion for those not having blind brothers or sisters but having s who are cousins, or 8.8 per cent as against 1.4 per cent. The tive proportions as to a blind parent are 2.3 per cent and 2.1 per The respective proportions as to blind children are 1.9 per cent 3 per cent. The situation in the two latter cases is doubtless e part to be explained by the smallness of the figures involved. 900 there were 39.3 per cent of the blind with parents cousins who had blind , of whom 33.4 per cent were ancestors or brothers or sisters, and 5.9 per cent l relatives or descendants.

(Of 62 blind persons with both parents blind, there is 1 having parents who are cousins.)¹

In certain schools for the blind the proportion of pupils reported as having parents who were related before marriage is generally from 1 to 3 per cent (occasionally higher). Of all pupils in the Colorado School from 1883 to 1930 the percentage so reported is 3.1.²

In the following table is given the percentage distribution of the blind by cause of blindness according to whether parents are or are not cousins.

Those causes of blindness which show larger proportions when the parents are cousins than when they are not, in the order of the ratios between the respective percentages, or in the order of the apparent extent of the influence upon them of consanguineous marriages, are as follows: amaurosis and allied disorders, malformations, congenital blindness, retinitis pigmentosa, sore eyes, progressive myopia, diseases of the choroid, retinitis hemorrhagica, rheumatism, atrophy of the optic nerve, and neuralgia. The results here are but in limited agreement with those shown for the several causes of blindness correlated with the existence of blind relatives. Rheumatism is an affection not included in the former case. Cataract and glaucoma might possibly have been included in the category of diseases influenced by the con-

¹ In Table V in Appendix A is given the percentage distribution of the blind, and of males and females separately, by consanguinity of parents, according to whether one or both parents are blind, and according to sex of parent if only one is so, so far as is reported (see *ante*, p. 675). Both parents are apparently as likely to be blind in the case of consanguineous marriages as in the case of non-consanguineous marriages, though the numbers involved in either case are too small to throw much light on the matter. Consanguinity is slightly more likely to be involved when one parent is blind than when neither is so. Such is the case also when the father is blind, but not when the mother is so. With males the tendencies are the same, though somewhat less pronounced. Among males the likelihood of both parents being blind is doubled in the case of consanguineous marriages. With females the general tendencies are the opposite, though there remains the lesser likelihood of the mother being blind when parents are first cousins. It would thus seem that the effects of consanguinity in relation to blindness in a parent are in greater evidence through the male. In Table VI are given for the blind of both sexes, having blind brothers or sisters and blind children, according to consanguinity of parents, either alone or in combination, the percentage distribution and the percentage which such number constitutes of the total. Both blind brothers or sisters and blind children together and blind brothers or sisters alone are the more likely in the case of consanguineous marriages. Apparently such is not true with respect to blind children only, though the number involved when parents are first cousins is too small to permit any definite comparisons in the matter. In Table VII is given, by consanguinity, for the blind of both sexes, and of each sex separately, the percentage distribution according to status of vision in brothers and sisters. The proportion of such relatives is over four times as great when parents are first cousins as when they are not. The difference is slightly greater when a sister is blind than when a brother is so. With males the tendencies are a little more pronounced; with females, a little less. In Table VIII are given similar figures with respect to blind children. Deductions, however, are to be drawn with great caution, and are rather to be held in abeyance till further knowledge on the subject is at hand.

² See in particular *Journal of Missouri State Medical Association*, xxv., 1928, p. 97; *Transactions of Medical Society of State of North Carolina*, 1915, p. 295.

PERCENTAGE DISTRIBUTION OF BLIND BY CAUSE OF BLINDNESS ACCORDING TO
CONSANGUINITY OF PARENTS

CAUSE OF BLINDNESS	PER CENT DISTRIBUTION		
	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>
Total.....	100.0	100.0	100.0
Specific affection of eye.....	38.6	31.8	38.6
Diseases of conjunctiva.....	6.1	3.6	6.0
Trachoma (granular eyelids).....	1.6	1.0	1.5
Ophthalmia neonatorum.....	3.3	1.4	3.2
All other.....	1.2	1.1	1.2
Diseases of cornea.....	1.2	0.9	1.2
Diseases of iris.....	0.7	....	0.7
Diseases of choroid.....	0.2	0.3	0.2
Glaucoma.....	5.4	3.2	5.6
Diseases of retina.....	1.4	1.3	1.4
Retinitis pigmentosa.....	0.1	0.3	0.1
Retinitis hemorrhagica.....	0.3	0.4	0.3
Detachment of retina.....	0.5	....	0.5
All other.....	0.5	0.6	0.5
Diseases of optic nerve.....	6.9	7.2	6.9
Atrophy of optic nerve.....	4.9	5.3	4.9
All other.....	2.0	1.9	2.0
Cataract.....	13.7	10.3	13.7
Amaurosis and other disturbances of vision.....	0.2	1.4	0.1
Progressive myopia.....	0.3	0.7	0.3
Cancer and other neoplasms.....	0.7	0.1	0.7
All other diseases of eye.....	0.6	0.9	0.6
Combination of two or more diseases of eye.....	1.3	2.0	1.2
Diseases other than specific affection of eye.....	15.7	14.6	15.9
Diseases of head, other than meningitis.....	1.1	1.0	1.1
Rheumatism.....	0.5	0.6	0.5
Syphilis.....	0.5	0.3	0.5
Locomotor ataxia.....	0.2	....	0.2
All other.....	13.4	12.8	13.6
Accident or other injury (including sympathetic ophthalmia).....	16.5	9.3	16.7
Malformations.....	0.4	1.3	0.4
All other definitely reported causes.....	2.3	2.3	2.4
Causes indefinitely or inaccurately reported.....	25.5	39.5	25.1
Congenital (cause not stated).....	7.4	22.2	6.9
Old age.....	2.2	0.7	2.1
Neuralgia.....	1.5	1.7	1.6
Exposure to heat.....	1.4	0.9	1.4
Sore eyes.....	1.4	3.3	1.3
All other.....	11.6	10.7	11.8
Combination of different classes of causes....	0.9	1.1	0.9

sanguinity of parents but for the circumstance that their effects, being the more pronounced in the later years of life, have not as yet developed. To some extent glaucoma is represented by neuralgia.¹ The exact connection between blindness and consanguineous mar-

¹ In 1910 the results were largely the same, except in particular as to atrophy of the optic nerve and neuralgia. The proportions were nearly equal in the case of cataract, progressive myopia, scrofula, and sore eyes. In 1900 there were reported larger proportions for consanguineous marriages in the case of scrofula, measles, scarlet fever, and catarrh.

riages through the operation of different specific disorders is far from being known at present.

In the following table is given the percentage distribution of the blind according to whether or not parents are first cousins, by age of the loss of vision.

PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT LOSS OF VISION ACCORDING TO CONSANGUINITY OF PARENTS

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION		
	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>
Total.....	100.0	100.0	100.0
Born blind.....	10.0	24.8	9.3
Not born blind.....	90.0	75.2	90.7
Losing vision at age of—			
Less than 20 years.....	26.7	26.7	26.6
Less than 1 year.....	5.6	2.1	5.6
1 year.....	1.4	1.6	1.4
2 to 4 years.....	4.0	4.1	4.0
5 to 9 years.....	6.2	6.7	6.2
10 to 14 years.....	4.6	6.5	4.6
15 to 19 years.....	3.5	4.2	3.6
Age not definitely reported.....	1.4	1.5	1.1
Infancy.....	0.6	0.9	0.5
Childhood or youth.....	0.8	0.6	0.6
20 years of age or over.....	63.3	48.5	64.1
20 to 24 years.....	3.9	19.0	3.9
25 to 44 years.....	17.5	4.2	17.7
45 to 64 years.....	22.2	16.6	22.5
65 years or over.....	19.7	8.7	20.0

There appears a strong tendency to blindness at the earlier periods of life in the case of blind persons having parents who are cousins. That some sort of connection exists between consanguineous marriages and congenital blindness in particular seems evident from the fact that the proportion born blind is between two and three times as great for those whose parents are cousins as it is for those whose parents are not so related, the respective percentages being 24.8 and 9.3. It is also to be observed that the proportion of congenital blindness in which consanguineous marriages are involved is 5.4 per cent, whereas the proportion of all blindness in which such marriages are involved is, as we have seen, 2.1 per cent. For persons becoming blind in the earlier years of life (except the first year) the proportions are likewise generally greater for those whose parents are cousins. It would seem to be indicated from all this that whatever the effects produced by consanguineous marriages, they assert themselves predominantly at birth, and also in greater or less degree in childhood and youth.

In the following table is given the percentage of the blind with one or both parents blind according to whether or not parents are cousins.

PERCENTAGE OF BLIND HAVING ONE OR BOTH PARENTS BLIND ACCORDING TO CONSANGUINITY OF PARENTS

CONGENITAL BLINDNESS	TOTAL	PARENTS COUSINS		PARENTS NOT COUSINS	
	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>
Total.....	100.0	100.0	2.1	100.0	97.9
Born blind.....	10.7	13.9	2.8	10.7	97.2
Not born blind.....	89.3	86.1	2.1	89.3	97.9

Among the blind having parents who are cousins the proportion born blind is 2.8 per cent, as against 2.1 per cent for those not born blind. Among persons born blind the proportion having parents who were cousins is 13.9 per cent, as against 10.7 for those having parents who were not cousins.¹

Consanguineous marriages which have an effect upon blindness, it thus appears, are not of relatively frequent occurrence. But where they do take place, there is found to be a decided connection between them and resulting blindness in the offspring. The matter seems a part, or a specific example, of a general law, and one of wide application, namely, that in the blood relationship of parents the possibilities are intensified of the perpetuation of a given strain, or that a latent tendency toward a hereditary defect is more likely to become evident in consanguineous marriages than in non-consanguineous marriages—or in the potential emergence of what are to be regarded as hereditary propensities, whether good or ill, already present in the germ cell—a law which holds true no less with respect to the transmission of blindness. How far, however, if at all, such blindness is to be ascribed directly or solely to the fact of the relationship of the parents, is a subject for question. The main consideration, and the point in regard to which we can, in the present state of our knowledge, be most sure, seems to be that in such marriages the chances are at least doubled of the offspring acquiring the characteristics of the parents,

² In 1900 the blindness of 25.0 per cent of those whose parents were cousins was congenital. Of this group 55.4 per cent also had blind relatives. Among the blind whose parents were not related, the proportion having blind relatives was 17.6 per cent, and the proportion of congenital cases was 6.8 per cent, while the proportion of those born blind and also having blind relatives was 27.9 per cent. In other words, the proportion of the blind having blind relatives is over twice as great when the parents are cousins as it is when they are not; the proportion of the congenitally blind is nearly four times as great; and the proportion of the congenitally blind also having blind relatives is twice as great. Special Reports of Census Bureau, "The Blind and the Deaf," 1906, pp. 16, 17, 49.

or of the reappearance of a family disposition; and that in them the liability is thus proportionately enhanced of transmitting blindness.

POSSIBLE ACTION FOR PREVENTION OF HEREDITARY BLINDNESS

Though blindness of hereditary character constitutes, all told, a relatively small amount of blindness in general—the portion which is to be so ascribed operating through a limited number of diseases—yet this portion presents a serious problem, and deserves full attention. Some families in society are deeply affected with blindness, which passes from generation to generation, appearing not only in a direct line but in indirect or collateral lines as well. The exact connection of heredity with blindness, or the processes by which hereditary forces are directed, have been but little revealed to our present knowledge. The whole question is a large one, belonging alike to eugenics and to medical science. Much that is now hidden will doubtless be unfolded to us in the future.

Whatever present action is incumbent upon us should be taken, with whatever rigorous measures may be called for. A very great field is before us for general education upon the subject; and a field also for legislation, which will perhaps become more clearly defined in the course of time.¹ So far as the matter is within the province of eugenics and of medical science, it is according to their pronouncements that we will have principally to be governed.

Towards the formulation of a program or plan of action, the following may be set down as in the main the conclusions which are to be drawn from our foregoing study with respect to the effects of heredity upon blindness. (1) So far as we can discover, the whole matter is a part of the general laws of heredity, in respect to which

¹ In some States there has been consideration of the prohibition of the marriages of congenitally blind persons, as well as the marriages of certain other classes. The proposal has also been made that after the birth of a blind child to a couple, the parents be prevented, by sequestration or by sterilization, from having other children. See *Journal of American Medical Association*, lxx., 1918, p. 1994; Transactions of Section on Ophthalmology of American Medical Association, 1918, p. 61. Suggestion has likewise been made of the enactment of a law to contain the following provisions: when a man or woman about to be married is believed by a tax-payer to have a visual defect, or to be blood relatives of each other (within the second degree), such tax-payer may apply to the court for an injunction; whereupon there are to be called before the court experts (physicians, professors, etc.), and the persons named are to undergo examination; if the court is of opinion that the defect or taint may be transmitted, and that possible children of the proposed marriage may conceivably, in consequence of blindness, become a public charge, it may enjoin such marriage, unless there is given a bond (possibly of \$15,000), which bond is to continue till the woman has attained the age of forty-five years; if blindness does occur in a child, and it becomes a public charge, the bond is to be duly forfeited; should the court not accept the claims of the tax-payer, he is to pay all fees and costs of the proceedings. See *Journal of American Medical Association*, lxxxiii., 1924, p. 270; lxxxv., 1925, p. 192; *Eugenical News*, xiii., 1928, p. 86; Transactions of American Ophthalmological Society 1926, p. 106.

our knowledge is very limited. (2) Blindness in the causation of which heredity plays a part apparently constitutes much the smaller portion of all blindness, though the exact extent of such blindness we cannot now determine. (3) However we regard the connection of blindness with heredity—whether simply the manifestation of blindness through particular affections, or whether, as a less immediate or direct result, the consequence of the passing on of a particular defect or infirmity, or of a certain physical condition, which is itself the cause of blindness—this connection is a very real one. From the extent of blindness among relatives of blind persons, both lineal and collateral, it is clear that there are a certain number of families in society deeply affected with blindness. (4) Heredity appears to bear upon blindness through the operation of a limited number of diseases; and it is for the existence of such diseases that we must look in our attempts to fix upon the seat of the trouble. (5) So far as the increased possibility of blindness resulting from the marriage of blind persons is concerned, there is little need to fear, purely from the standpoint of eugenics, that the amount thereof will prove considerable. This is true even with respect to the marriage of the blind with the blind, though on other grounds strong objections are to be advanced to such unions. The blind generally are much less given to marriage than is the normal population; and of their marriages those with blind partners form on the whole much the smaller part. In the marriage of blind persons the danger is confined to the relatively small number of diseases above referred to, which, in the case of couples both of the partners of which are blind, will rarely be the same in each of them. The likelihood of blind offspring is thus not necessarily greater when both parents are blind than when one is blind and the other sighted. It also follows that seeing persons having one of the diseases indicated are practically as liable to affect their offspring with blindness as are the blind suffering themselves from such disease. (6) The matter of greatest significance seems to lie in the possibility of the marriage of blind persons whose blindness is due to one of the diseases specified, especially in case of the existence of similar blind relatives, and in the possibility of the marriage of sighted persons, especially if with blind relatives whose blindness has resulted from one of these diseases. It is here that the real peril exists, and that the science of eugenics is to be called into requisition. (7) This science is also to be invoked with respect to consanguineous marriages which have a bearing upon blindness. Though these do not take place, so far as their effect on blindness is concerned, to any great extent, yet when they do, their consequences are very marked. Their relation to blindness consists

apparently for the most part in the circumstance that the chances of its transmission are thereby intensified, there being also a considerable connection with the question of blind relatives in general. In whatever attention is given to the problem of consanguineous marriages, their part in the causation of blindness should have due heed.

NOTE TO CHAPTER II.—On the connection of blindness with heredity, see Edward Jackson, "Manual of Diseases of Eye," 1907, p. 576; M. F. Guyer, "Being Well-Born," 1916, p. 108; Ernst Fuchs, "Textbook on Ophthalmology," 1917, p. 41; C. B. Davenport, "Heredity in Relation to Eugenics," 1911, p. 107; Arnold Knapp, "Medical Ophthalmology" (International System of Ophthalmic Practice), 1918, p. 461; International System of Ophthalmic Practice, 1910-1918, *passim*; Proceedings of American Association of Instructors of Blind, 1928, p. 418; Transactions of American Ophthalmological Society, 1882, p. 355; 1884, p. 662; 1918, p. 255; Transactions of Ophthalmological Society of United Kingdom, 1888, p. 262; Amy Barrington and Karl Pearson, "First Study of Inheritance of Vision and Relative Influence of Heredity and Environment on Sight," University of London, Francis Galton Laboratory for National Eugenics, Memoirs, v., 1909, p. 2; Report of Royal London Ophthalmic Hospital, 1905, p. 179; 1906, p. 389; 1907, p. 6; Eugenics Record Office, Bulletin no. 21, 1921 (Bibliography of Hereditary Eye Defects); American Encyclopedia and Dictionary of Ophthalmology, 1916, viii., pp. 5812, 5876; Bulletin no. 2, Howe Laboratory of Ophthalmology (Harvard Medical School), 1930; E. M. East, "Heredity and Human Affairs," 1927, pp. 94, 149; Union of Counties Associations for Blind (England), Report on Hereditary Blindness, 1933; Report of Perkins Institution, 1847, p. 48; *Popular Science Monthly*, lxxv., 1909, p. 309; *Nature*, lxxxi., 1909, p. 49; *Scientific American*, Supp., lxxxii., 1916, p. 168; *Journal of Heredity*, x., 1919, p. 379; xxiii., 1932, p. 305; *Eugenics Review*, xxiv., 1932, p. 115; *Archives of Ophthalmology*, xlvii., 1918, p. 587; *Journal of American Medical Association*, lxx., 1918, p. 1994; lxxvii., 1921, p. 2059; lxxxiii., 1924, p. 270; *California State Medical Journal*, xii., 1914, p. 506; *Medical Record*, lxiv., 1903, p. 205; *American Journal of Ophthalmology*, xxxii., 1915, p. 235; xxxiii., 1916, p. 65; *Chicago Medical Recorder*, xxiv., 1903, p. 175; *American Gynecological and Obstetrical Journal*, xviii., 1901, p. 97; *Ophthalmoscope*, iv., 1906, pp. 493, 549; *Illinois Medical Journal*, xxvi., 1914, p. 499; *Ohio State Medical Journal*, x., 1914, p. 657; xi., 1915, p. 79; *Ophthalmology*, ix., 1913, p. 165; xii., 1916, p. 760; *New York Medical Journal*, lxxxv., 1907, p. 1162; *Annals of Ophthalmology*, vii., 1898, p. 357; xxvi., 1917, p. 573; *Ophthalmic Record*, xxiv., 1914, pp. 59, 109; *Southern Medical Journal*, ix., 1916, p. 266; *British Medical Journal*, 1886, ii., p. 254; 1914, ii., pp. 390, 393; *Lancet-Clinic*, vii., 1912, p. 653; *Lancet and Clinic*, i., 1903, p. 473; *Journal of Missouri State Medical Association*, xxiii., 1926, p. 97; *Texas State Medical Journal*, xxviii., 1933, p. 773; *Mind and Body*, xxxix., 1933, p. 310; *New York Medical Repository*, etc., iii., 1817, p. 75.

On the possible effects of blindness upon consanguineous marriages, or the connection between the two, see G. B. L. Arner, "Consanguineous Marriages," 1908, p. 59; A. H. Huth, "Marriage of Near Kin," 1887, p. 230; Transactions of Medical Society of State of North Carolina, 1915, p. 295; Transactions of American Medical Association, 1858, p. 321; *Journal of Statistical Society*, xxxviii., 1875, p. 153; *Independent*, lxi., 1906, p. 232; *Pennsylvania Medical Journal*, xii., 1909, p. 751; *American Journal of Ophthalmology*, xx., 1903, p. 337; *Ohio Medical and Surgical Journal*, vi., 1854, p. 298; *Ophthalmic Record*, xviii., 1909, p. 446; *Denver Medical Times*, xxviii., 1908, p. 112; *Journal of Missouri State Medical Association*, xxv., 1928, p. 97.

CHAPTER III

BLINDNESS AND DISEASE

BLINDNESS FROM DISEASES IN GENERAL

From diseases affecting the eye in one way or another there results, according to our previous findings, some three-fourths of all blindness. As has already been indicated, a very large portion of affections of the eye may be said to have their basis or origin in diseases of a more general nature. No small part is attributable to disorders of the digestive, circulatory, nervous, or other system of the human body, as well as to disorders of more particular character—besides the results of unhygienic living in general. So far as these have an effect upon the eyesight, their subjugation or mitigation will have notable manifestation in the reduction of blindness, or in its incidence being minimized.

In particular, with better dealing with general inflammatory diseases, diseases of the digestive system, and diseases on the order of rheumatism, there would be an immediate and heavy reduction of various forms of blindness. In large part infectious diseases responsible for blindness belong to infancy and the early years of life, some being more or less common diseases of childhood.¹ They include meningitis, scarlet fever, measles, mumps, typhoid fever, tuberculosis, and similar affections. Other infectious diseases are of venereal nature, which, as we have seen, have an extended influence upon the organs of vision.² The larger number of such affections are in most individual cases amenable to treatment, with the resultant saving of sight, if taken in hand at an early state; while by proper medical control in all instances, including where necessary due isolation, there can at least be accomplished a checking of their spread. In the control of meningitis in particular, with its consequences, no small gain is to be expected. Much betterment is similarly to be had in the intense and prolonged treatment of congenital syphilis. Sympathetic ophthalmia resulting from wounds, with possibly sympathetic inflammation and eventual loss of the uninjured eye, may sometimes be avoided by suitable measures.³

¹ On the relation of infectious diseases to blindness, see *Illinois Medical Journal*, xxi., 1912, p. 401.

² Congenital syphilis may usually be helped by ante-natal treatment of the mother.

³ See *Sight Saving Review*, June, 1932, p. 114; *American Journal of Ophthalmology*, xxx., 1930, p. 597.

With certain of the leading specific affections of the eye, notably cataract and glaucoma (especially of an acute form), there is in the affording of due and seasonable treatment occasion for very much preventive work, perhaps much more than is generally realized. Such affections are in no small degree related to more general systemic disorders, and may be diminished to the extent that the latter are brought under control. Cataract might be greatly reduced through the avoidance of certain disorders or injuries, whether local or general, by means of which it is induced or precipitated.¹ (It is often in complication with or secondary to certain other local affections of the eye, focal infections, general inflammatory disorders, diseases of the digestive system, etc.) With different forms (congenital, senile, traumatic) there may be benefit from proper treatment. Often no little also is to be gained from timely and skilled operations. Diminution is likewise possible to a considerable extent with glaucoma, which is affected in no small measure by such influences as lack of rest, improper diet, impure blood, etc.² (It is sometimes manifest during the course of other ocular complaints.) In its early stages in particular it may be helped by proper treatment, possibly including operations.

There are, furthermore, several specific diseases of a highly contagious character, often appearing in the years of childhood and youth, which have a peculiar bearing upon the eyesight, and in respect to which there are manifest possibilities of prevention. These are in the main ophthalmia neonatorum, trachoma, conjunctivitis, and keratitis, all largely surface inflammations of the eye. The first two will require rather detailed attention. Conjunctivitis, an inflammation of the conjunctiva, possibly a consequence of unwholesome living conditions, including the sequelæ of various infectious diseases, is generally to be avoided by the use of clean towels, handkerchiefs, etc. Keratitis is of two principal forms, both affections of the cornea, and often resulting from systemic depleting conditions. Phlyctenular keratitis, most likely of tubercular origin, and frequently with the characteristics of scrofula or eczema, is a consequence largely of bad housing and poor nutrition; its prevention depends in large measure upon the establishment of wholesome sanitary surroundings, and upon the general treatment for tuberculosis. Interstitial keratitis is due in most cases to syphilis, and in a few to tuberculosis.

With respect to certain other diseases causing blindness there is no

¹ See *American Naturalist*, l., 1916, pp. 119, 442, 751; *Hospital Social Service*, xxiv., 1931, p. 97; Report of Massachusetts Commission for Blind, 1915, p. 68; *Monthly Labor Review*, xiii., 1921, 3, Sept., p. 657; Proceedings of National Society for Prevention of Blindness, 1927, p. 73; *Archives of Ophthalmology*, xlvii., 1918, p. 612.

² See *Nature*, lxxxvi., 1911, p. 205; *Hygeia*, iv., 1926, p. 523; ix., 1931, p. 133; *Sight Saving Review*, March, 1931, p. 14; *American Journal of Ophthalmology*, xv., 1932, p. 189.

small field in the way of prevention or mitigation. Atrophy of the optic nerve owes much to toxic actions in the system.¹ Opacities of the cornea are often due to the after effects of inflammatory diseases, perhaps themselves of brief duration, which leave some portion of the cornea clouded. Corneal ulceration, certain forms of retinitis, and other affections of the eye may in not a few instances be helped.

Finally, even with those diseases chargeable with blindness the possibilities of the prevention of which are not so apparent, including those involving the deeper structure of the eye, there can be little doubt that considerable gain might generally be effected in the employment of fitting medical and surgical measures.² The problem is largely in the hands of medical science, and for the present the most we can do is to wait upon its developments in the study both of the prevention of disease and of its treatment. At the same time an immediately practical program lies in the better safeguarding of the general health of the community, which will insure a measurable diminution of blindness.³ Of paramount importance in all cases is the examination of the eyes in the early years of life, with its periodical examination thereafter.

TRACHOMA

Trachoma, or granulated lids (occasionally called "red sore eyes"), sometimes characterized by purulent discharges, is a disease resulting from inflammation of the conjunctiva and its adnexa (including the cornea), with friction of the eyelids (including the eyelashes) against the eyeball, in which process are produced small eruptions, or "granulations," under the eyelids. Of the persons affected with it not all lose their sight, but a very considerable proportion eventually do, most of these becoming partially, but effectively, blind.⁴ The underlying causes of trachoma and the reasons for its spread are not as yet fully known.⁵ In a large degree it is associated with inferior diet or nutrition and with undesirable unsanitary conditions—with low living

¹ On the connection of this disease with other diseases, see Report of New York Commission for Blind, 1928, p. 44.

² An important consideration is the regulation of eye practitioners of all kinds.

³ In certain quarters, most often in connection with clinics in large cities, and also where a general system of nursing prevails, noteworthy efforts are being put forth to treat beneficially cases of impaired sight, especially cases in an incipient stage. Traveling eye clinics would be of great help elsewhere. On clinics and follow-up work for eye diseases, see Proceedings of National Conference of Charities and Correction, 1915, p. 229; Transactions of American Academy of Ophthalmology and Oto-Laryngology, 1926, p. 226; *Archives of Ophthalmology*, xlvii., 1918, pp. 418, 439. See in particular publications of National Society for Prevention of Blindness.

⁴ On the extent of impaired vision from trachoma, see United States Public Health Reports, 1932, p. 893.

⁵ Research is under way upon the subject. The disease was known to ancient times. On the virulence of trachoma, see *ibid.*, p. 1149.

levels in general. It is perhaps passed on in some measure by the use of unclean household appliances (as the common towel or wash basin). The disease is found in various parts of the country, but in the main it is concentrated in particular sections or among particular groups.¹

Requirements for the checking of trachoma are the compulsory reporting to the health authorities of all cases; rigorous follow-up work in the way of treatment of such cases; the periodical examination of school children and of other persons likely to be affected; the establishment of hospitals in particularly infected regions; the regulation of common lavatories in public places; and the due inspection of immigrants coming to the country. Perhaps even more important considerations, apart from early treatment, are simply the inculcation of personal hygiene; the improvement of general economic conditions; the establishment of traveling clinics; and the employment of public health nurses (especially for the purpose of showing the value of proper diet, sanitation, etc.). In general there is to be conducted a thorough campaign of education respecting the disease in every locality where it may in any degree be prevalent.

In most of the States trachoma is now listed among the communicable and contagious diseases for which report to the health authorities is required.² By a considerable number of State and local departments of health appropriate measures in the matter have likewise been adopted.³ Notable action has been taken by the Federal Government, under the direction of the United States Public Health Service, particularly in the creation of special trachoma hospitals in certain of the States affected—Kentucky, Virginia, Tennessee, West Virginia, North Dakota, Arkansas, and Missouri.⁴ The first was in Kentucky in 1913. Hospitals are still continued in Kentucky, Tennessee, and Missouri.⁵ In some States aid has been granted from State funds in addition.⁶ Trachoma is regarded as a "dangerous contagious" disease for the barring of immigrants so affected from entering the United States.⁷

OPHTHALMIA NEONATORUM

The disease known as ophthalmia neonatorum or inflammation of the eyes of the newly born, is an acutely infectious disease of the con-

¹ See *ante*, p. 18.

² See publications of National Society for Prevention of Blindness. See also *Ophthalmology*, xii., 1916, p. 496.

³ In a few instances special classes for trachomatous children have been established.

⁴ In 1912 an investigation was authorized through the Public Health Service. See *Stat.*, 1912, ch. 385; 1913, ch. 3; 1914, ch. 223; 1915, ch. 75.

⁵ On the reduction being effected in trachoma, see *post*, pp. 137, 138.

⁶ The number treated annually by each hospital has not been less than 100. Often there are field nurses in connection.

⁷ In 1897 it was so declared. In 1903 it was specified as a bar.

junctiva caused by certain bacteria which find entrance into the eyes of babies, usually at the time of birth;¹ and unless attended to within a few hours of its appearance destroys the sight (or so scars the cornea as greatly to reduce vision).² The first symptoms are generally redness, then a swelling, and finally the discharge of matter. In not a few schools for blind children it has been a leading cause of blindness.³

The prevention of blindness from ophthalmia neonatorum is not inherently difficult, involving as it does only the taking of very simple but very necessary measures. It can be accomplished with little trouble, and the work if rightly performed is almost certain to be effective. The all-important consideration is the injection into the eyes of the infant shortly after birth, of a very weak solution of silver nitrate or of certain other derivatives of the silver salts,⁴ with perhaps also a washing out with a neutral salt solution. Should the eyes of the child be healthy, no harm is done; should, however, they be infected, the disease germs are at once destroyed.⁵

To meet the situation, and to insure the general use of a prophylactic, several things are necessary: (1) direct requirement of the use of a prophylactic, or report of all births a short time thereafter, with a statement as to whether or not a prophylactic has been used; (2) report of all cases of inflammatory eye trouble occurring within a few weeks after birth, with attention to uncared for ones by health authorities; (3) the providing of supplies of the prophylactic without charge if called for; and (4) as an incidental, but very important, measure, the proper and sufficient regulation of the practice of midwives, in whose hands occur such a large number of births,⁶ and whose qualifi-

¹ In certain cases the disease is communicated shortly after birth, especially from articles of clothing or similar articles. In a few instances it results from sources other than maternal, as from influenza or similar germs.

² The disease is due to the operation of several micro-organisms. Most of them seem to be gonococci, the proportion of such being approximately 60 per cent. Others are pneumococci, streptococci, micrococci catarrhales, colon bacilli, etc. See *New York State Journal of Medicine*, xi., 1911, p. 593; *Medical Times*, xli., 1913, p. 322; *Journal of Missouri State Medical Association*, xiv., 1917, p. 7; *American Journal of Public Health*, vi., 1916, p. 926; *Survey*, xxxv., 1915, p. 43; Report of Committee for Prevention of Blindness, 1913, p. 12; Proceedings of National Conference of Social Work, 1927, p. 236; Proceedings of National Society for Prevention of Blindness, 1927, p. 19; 1929, p. 102.

³ See *post*, pp. 137, 144.

⁴ The silver nitrate should as a general thing not be over 1 per cent. Other possible solutions are argyrol, protargol, and collargol.

⁵ This method, of which the efficacy is now generally recognized, is sometimes called the Credé method, from the name of its discoverer, Professor Carl Credé, who first made application of it in a hospital in Leipsic, Germany, in 1879. On its beneficial results, see American Association for Conservation of Vision, Monograph Series, 1911, no. 1; *Sight Saving Review*, June, 1932, p. 128.

⁶ On the general condition of midwifery in the United States and its relation to possible blindness, see *Maryland Medical Journal*, lii., 1909, p. 494; *New York Medical Journal*, xci., 1910, p. 898; *Illinois Medical Journal*, xxi., 1912, p. 419; *American Journal of Public Health*, iv. (n. s.), 1914, p. 197; *American Journal of Obstetrics*, lxxiii., 1916, p. 385; *Survey*, xxvii., 1911, p. 1372; xxxii., 1914, p. 315; *American Journal of Sociology*, xx., 1915, p. 684;

cations are often not of a high order.¹ Other important considerations are the keeping of proper records in hospitals and other institutions and the prompt reporting of physicians, midwives, and nurses. Of particular value are searching follow-up visits of all reported or suspected cases. Of utmost consequence is a campaign of education upon the subject, especially for the benefit of mothers.

In accordance with the principal measures proposed for the prevention of ophthalmia neonatorum, and largely as a result of special campaigns in the matter, there have been legal enactments in an ever increasing number of States of the Union.² In all but a few States there are now laws requiring the use of a prophylactic at birth; in all but a few States, laws requiring the reporting to the proper health authorities of all cases of trouble with the eyes of infants (though in certain ones only with respect to gonorrheal infection); and in all but a few States, laws providing for the free distribution of a prophylactic (in some instances application being only to certain specified groups).³ In most States attention for uncared-for cases is authorized. In some a statement is required on birth certificates as to whether a prophylactic has been employed. In provisions respecting midwifery in certain States there is express mention of the connection with possible infant blindness. In a number of States health authorities are empowered to conduct educational campaigns upon the subject of ophthalmia neonatorum.⁴

The laws relating to ophthalmia neonatorum are but partially

Delineator, Dec., 1917; Proceedings of National Conference of Charities and Correction, 1910, p. 350; Publications of Committee for Prevention of Blindness, 1913, "The Midwife in England" (C. C. Van Blarcom), pp. 13, 56; early reports and other publications; Proceedings of American Association for Study and Prevention of Infant Mortality, 1915, pp. 90, 163.

¹ In some States and in some cities the proportion of births attended by midwives has varied from one-fourth to two-thirds; in others it has been only a few per cent. On the general qualifications of midwives, see *American Journal of Obstetrics*, lxxiii., 1916, p. 385; *Survey*, xx., 1909, p. 399; xxxii., 1914, p. 315; Report of National Committee for Prevention of Blindness, 1913, pp. 9, 14; 1914, p. 25; Report of Cleveland Society for Promoting Interests of Blind, 1911, p. 23; Ohio Commission for Blind, "Practical Work in Sight Saving," 1911, p. 6; Edith Abbott, "Immigrant and Community," 1911, p. 155.

² On the extent of laws among different States, see Proceedings of Conference of State and Provincial Health Authorities of North America (Report of Standing Committee on Conservation of Vision); 1926, p. 92; 1930, p. 68. See also various publications of National Society (National Committee) for Prevention of Blindness; United States Children's Bureau Publications, no. 16, 1916, p. 106; United States Public Health Bulletin, no. 49, 1911; American Encyclopedia and Dictionary of Ophthalmology 1916, ix., p. 7137; *Ophthalmology*, xii., 1916, p. 276.

³ On a veto of a bill upon the subject by the Governor of Illinois, see *Illinois Law Review*, xxvi., 1932, p. 715; *Journal of American Medical Association*, c., 1933, p. 1340.

⁴ In a number of cities the disease has been declared to be contagious, and to be treated accordingly, while in some steps have been taken in the way of following up of cases. Other important regulations have also been adopted by State or local departments of health, departments of charities, or other public authorities, especially in requiring the use of a prophylactic in all lying-in hospitals.

enforced. Not carried out in general practice are such provisions as those requiring the reporting of eye trouble to health authorities,¹ or those requiring the use of a prophylactic at birth,² or those requiring the investigation of reports of such trouble.³ Attempts at enforcement are sometimes attended with difficulty. Prosecutions are in general not frequent. Fines when imposed are often small. Convictions, however, when secured have had wholesome effects.

This situation is in the main due to indifference, negligence, or ignorance. It is better in some areas than in others. The laws have on the whole not been without influence.⁴ Not infrequently also beneficial results have occurred from follow-up work. No small results are to be attributed to general advances in obstetrical practice. The greatest gains have come from the educational campaigns that have been directed against ophthalmia neonatorum.⁵ That fruit is being borne from the attacks upon the disease are quite in evidence from its material decrease as a cause of blindness of recent years.⁶

¹ In the most advanced areas reporting seems to occur in from one-half to two-thirds of cases. Reporting is in general in the following order: hospitals, physicians, institutions, nurses, midwives, parents. In some areas reporting by midwives, or even by physicians, is slight.

² On the number of cases of "sore eyes" reported, see Philadelphia Hospital and Health Survey, 1929, p. 332. On the extent of the use of a prophylactic, see *Maryland Medical Journal*, lii., 1909, p. 489; *Survey*, xxv., 1910, p. 9; xxv., 1911, p. 522; *Journal of American Public Health Association*, i., 1911, p. 455; *Ohio Public Health Journal*, ix., 1918, p. 416; American Association for Conservation of Vision, Monograph Series, 1911, no. 1; Massachusetts Commission for Blind, Sight Saving Bulletin, no. 7, 1910; Reports of Social Work of Massachusetts Eye and Ear Infirmary; Report of National Committee for Prevention of Blindness, 1913, p. 8; *News Letter*, Dec., 1918.

³ See *Noble v. State*, 11 Ohio App., 495 (1918) (failure to use prophylactic in home of mother not regarded as violation of law); *Medlin v. Bloom*, 230 Mass., 201, 119 N. E., 773 (1918); *Shoovers v. Hahn*, 178 Wis., 615, 190 N. W., 432 (1922) (action against physician three years after loss of sight regarded as too late).

⁴ On the results of the laws, see Transactions of Medical Society of State of North Carolina, 1915, p. 299; Proceedings of National Conference of Charities and Correction, 1912, p. 326; Ohio Bulletin of Charities and Correction, xx., 1914, 3, July, p. 23; Bulletin of California Board of Health, March, 1918; Report of Massachusetts Commission for Blind, 1911, p. 8; 1914, p. 79; 1915, pp. 15, 63; Report of Ohio Commission for Blind, 1912, p. 13; Report of National Society for Prevention of Blindness, *passim*; reports of Illinois Society for Prevention of Blindness; *News Letter*, Oct., 1916; Dec., 1918; *Ohio State Medical Journal*, xiii., 1913, p. 356; *Lancet-Clinic*, lxix., 1912, p. 172. See in particular publications of National Society for Prevention of Blindness.

⁵ See National Society for Prevention of Blindness, Publication no. 13, 1917, "Sight Saving a Civic Duty" (Winifred Hathaway); other publications: Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 62; Proceedings of American Association of Workers for Blind, 1907, p. 29; Report of Cincinnati Association for Blind, 1912, p. 4; *Archives of Ophthalmology*, xliii., 1914, p. 501; *Annals of Ophthalmology*, xxvi., 1917, p. 661; *Outlook for Blind*, i., 1907, p. 108; Proceedings of Conference of State and Provincial Health Authorities of North America, *passim*.

⁶ See *post*, pp. 137, 144.

NOTE TO CHAPTER III.—(See statement prefixed to Chapter I.) On the extent of ophthalmia neonatorum and on the possibilities of its prevention, see American Medical Association, Conservation of Vision Pamphlets, 1913, xiii. ("Infant Blindness"); Proceedings of Conference of State and Provincial Health Authorities of North America, 1926, p. 92; 1930, p. 68; Proceedings of American Association for Study and Prevention of

Infant Mortality, 1916, p. 308; Report of Cleveland Society for Blind, 1911, p. 14; Report of Illinois Charities Commission, 1910, p. 32; Bulletin of Iowa Institutions, xi., 1909, pp. 148, 226; Illinois Bulletin of Public Charities, x., 1908, 3. June, p. 6; Illinois Institution Quarterly, i., 1910, 1. May, p. 11; ii., 1911, 2. Sept., p. 52; Report of Massachusetts Commission for Blind, 1914, p. 79; 1915, p. 60; New York State Department of Health, Monthly Bulletin, 1915, p. 277; United States Children's Bureau, Publications, no. 4, 1915, p. 30; United States Public Health Bulletin, 1911, no. 49; Venereal Disease Bulletin, 1910, no. 42; Transactions of American Ophthalmological Society, 1879, p. 337; California Board of Health, Monthly Bulletin, March, 1928, p. 415; *Ladies Home Journal*, June, 1907; *Literary Digest*, xlviii, 1914, p. 1042; *Chambers' Journal*, lxiii., 1886, p. 316; *Children's Charities*, March, 1910; *Charities and Commons*, xx., 1908, p. 518; *Survey*, xxii., 1909, p. 399; xxv., 1911, p. 877; xxxii., 1914, p. 315; xxxv., 1915, p. 43; xxxvii., 1916, p. 340; li., 1924, p. 379; *Outlook for Blind*, vii., 1913, p. 14; *News Letter*, Feb., 1928; *Albany Medical Annals*, xxx., 1909, p. 335; *Massachusetts Medical Journal*, xxvi., 1906, p. 471; *Virginia Medical Semi-Monthly*, xii., 1907, p. 265; xv., 1910, p. 409; *Ohio State Medical Journal*, v., 1909, p. 466; x., 1914, p. 469; *Indiana Medical Journal*, xxvi., 1908, p. 263; *Journal of Georgia Medical Association*, vi., 1917, p. 281; *Southwestern Journal of Medicine and Surgery*, xxv., 1917, p. 58; *Boston Medical and Surgical Journal*, cxiii., 1885, p. 151; cxxi., 1889, p. 401; cxxvi., 1892, p. 362; clx., 1909, p. 138; clxiii., 1910, p. 103; clxv., 1911, p. 656; clxvi., 1912, p. 737; clxviii., 1913, pp. 117, 275; clxxiv., 1916, p. 745; *American Journal of Obstetrics*, xvi., 1883, p. 1105; xxiii., 1890, p. 300; lvi., 1907, p. 665; *Medical Record*, xxxvi., 1890, p. 204; xliv., 1893, p. 257; xlvii., 1895, p. 203; lxxi., 1907, p. 200; lxix., 1907, p. 226; *American Journal of Ophthalmology*, i., 1884, p. 22; xiv., 1897, p. 225; xv., 1898, p. 289; xix., 1902, pp. 334, 361; xxiv., 1907, p. 289; xxvii., 1910, p. 257; xxviii., 1911, p. 353; i. (n. s.), 1918, pp. 43, 216, 290, 377; *New York Medical Journal*, xlix., 1889, p. 489; lxx., 1897, p. 869; lxxxix., 1909, p. 982; xc., 1909, p. 801; xcix., 1914, p. 1029; ci., 1915, pp. 1088, 1099, 1159; *Ophthalmic Record*, v., 1895, p. 55; xxii., 1913, p. 717; *Journal of Tennessee Medical Association*, i., 1908, p. 1; ix., 1916, p. 124; *Bulletin of American Academy of Medicine*, Oct., 1894, p. 607; *Journal of American Medical Association*, xxii., 1894, pp. 612, 739; xxiii., 1894, p. 811; xxxix., 1902, p. 704; xlv., 1906, pp. 1262, 1289; l., 1908, p. 1745; lii., 1909, p. 876; lx., 1913, p. 2003; lxi., 1913, p. 705; lxii., 1914, p. 145; lxiii., 1914, p. 1756; lxx., 1915, p. 1317; lxxxi., 1923, p. 849; *Illinois Medical Journal*, xiv., 1908, p. 445; xvi., 1909, p. 643; xx., 1911, p. 291; xxv., 1914, p. 182; *West Virginia Medical Journal*, ii., 1908, p. 272; vii., 1912, p. 154; ix., 1915, p. 331; *New York State Journal of Medicine*, vii., 1907, pp. 136, 164; ix., 1909, pp. 205, 420; xi., 1911, p. 593; xii., 1912, p. 572; xxvii., 1927, p. 1038; *Archives of Ophthalmology*, xxxv., 1906, p. 511; xlv., 1916, p. 109; *Rhode Island Medical Journal*, xv., 1932, p. 43; *Eye, Ear, Nose, and Throat Monthly*, ix., 1930, p. 371; *Journal of Social Hygiene*, xiii., 1927, p. 385; *St. Louis Medical Review*, lix., 1910, p. 37; *Journal of Minnesota State Medical Association*, xxx., 1910, p. 47; *Journal of Arkansas Medical Society*, vii., 1911, p. 229; *Lancet-Clinic*, lxii. (n. s.), 1909, p. 230; *Kentucky Medical Journal*, xiv., 1916, p. 418; xv., 1917, p. 215; *Journal of South Carolina Medical Association*, xi., 1915, p. 43; *Journal of Maine Medical Association*, v., 1915, p. 197; *Trained Nurse and Hospital Review*, l., 1913, p. 138; *The Nurse*, i., 1914, p. 165; *Modern Hospital*, v., 1915, pp. 127, 206, 288; *Pennsylvania Medical Journal*, xvi., 1913, p. 278; xvii., 1913, p. 16; *Medical Times*, xli., 1913, p. 332; xlii., 1914, p. 349; *Medical Review of Reviews*, xxiv., 1918, p. 385; *Journal-Lancet*, xxxvi., 1916, p. 606; xxxviii., 1918, p. 350; *Journal of American Institute of Homeopathy*, xi., 1918, p. 269; *Canadian Medical Association Journal*, viii., 1918, p. 724; *Good Health*, xlv., 1909, p. 911; *Maryland Medical Journal*, xxv., 1891, p. 23; lii., 1909, p. 489; *Iowa Medical Journal*, xvi., 1910, pp. 367, 425, 429, 437; *Interstate Medical Journal*, xvi., 1908, p. 722; *Journal of Indiana State Medical Association*, iii., 1910, p. 439; *Philadelphia Medical Journal*, iii., 1899, p. 336; ix., 1902, p. 664; *American Journal of Public Hygiene*, xx., 1910, p. 181; *Journal of Society of Sanitary and Moral Prophylaxis*, xi., 1915, p. 23; *American Journal of Surgery*, xx., 1906, p. 331; *Alabama Medical and Surgical Age*, iv., 1891, p. 11; v., 1893, p. 635; vi., 1894, p. 370; *Woman's Medical Journal*, xvii., 1907, p. 330; xxi., 1911, p. 196; *Brooklyn Medical Journal*, ii., 1888, p. 204; vii., 1893, p. 660; *Annals of Gynecology, and Pediatrics*, v., 1891, p. 243; xix., 1906, p. 582; *Southern Practitioner*, xv., 1893, p. 489; *Yale Medical Journal*, i., 1894, p. 156; *Northwestern Medical and Surgical Journal*, i., 1871, p. 403; *Therapeutic Gazette*, xxviii. (3rd s.), 1912, p. 691; *Southern Medical Journal*, ii., 1909, p. 679; xix., 1926, p. 140; *New England Medical Monthly*, xii., 1892, p. 117; *American Journal of Medical Sciences*, lxxxviii. (n. s.), 1884, p. 443; *Journal of Oklahoma Medical Association*, x., 1917, p. 23; *Edinburgh Medical Journal*, xxviii., 1883, p. 877; xl., 1896, p. 1004; *Lancet*, 1888, ii., p. 412; *British Medical Journal*, 1881, ii., p. 702; 1889, ii., p. 699; *Indianapolis Medical Journal*, xiii., 1910, p. 562;

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On trachoma, see Allen Greenwood, "Military Ophthalmic Surgery," 1917, p. 53; Louis Resnick and L. H. Carris, "Eye Hazards in Industrial Occupations," 1924, p. 151; G. M. Price, "Hygiene and Public Health," 1919, p. 247; Report of Minnesota Commission for Blind, 1923, p. 111; American Year Book, 1914, p. 415; 1916, p. 707; Proceedings of International Congress on Hygiene and Demography, 1912, ii., p. 79; Report of American Public Health Association, 1907, p. 163; Transactions of Association of Physicians of Long Island, 1901, p. 63; Transactions of Medical Society of State of New York, 1896, p. 330; Transactions of Academy of Ophthalmology and Oto-Laryngology, 1911, p. 321; Transactions of Society of Tropical Medicine, 1914, p. 60; Proceedings of Section of Ophthalmology of American Medical Association, 1913, pp. 414, 424, 436 (Papers, pp. 117, 127, 383); Proceedings of National Society for Prevention of Blindness, 1926, pp. 55, 58, 61, 64, 69, 72, 76, 78, 79; 1927, pp. 151, 155, 168, 171, 180; 1929, pp. 123, 125, 134; United States Public Health Reports, 1912, p. 1815; 1913, p. 1331; 1914, pp. 560, 1360, 1421, 1853, 1895; 1915, pp. 677, 825, 1685, 2037, 2076, 3347, 3696; 1917, p. 1101; 1923, pp. 383, 560; 1928, p. 2210; 1929, p. 2913; 1930, p. 2040; 1932, pp. 38, 885, 1149; Public Health Bulletin, no. 19, 1907; Ohio Board of Health Bulletin, April, 1914, p. 934; New York City Department of Health, Bulletin, June, 1917; Monthly Bulletin of Missouri Board of Charities and Correction, xxiv., 1922, 3, Jan., p. 32; Illinois Institution Quarterly, i., 1910, 2, Aug., p. 10; Report of Arkansas Board of Control, 1922, p. 160; *World's Work*, xxviii., 1914, p. 426; *Spirit of Missions*, lxxviii., 1924, p. 739; *Southern Mountain Life and Work*, Oct., 1926, p. 3; *World Outlook*, Nov., 1910, p. 32; *Scientific American*, cxvi., 1917, p. 85; Supp., lxxvi., 1913, p. 231; *Nation's Health*, viii., 1926, p. 441; *Science*, Sept. 10, 1926, Supp., p. 14; *Public Health Nurse*, xix., 1927, p. 137; *The Nurse*, v., 1916, p. 85; *Hygeia*, iv., 1926, p. 84; v., 1927, p. 644; *American Journal of Public Health*, xvi., 1926, p. 706; xvii., 1927, p. 226; *News Letter*, Feb., 1928; *Charities and Commons*, x., 1903, p. 141; *Survey*, xxiv., 1910, p. 654; xxix., 1913, p. 679; xxxii., 1914, p. 111; xxxiv., 1915, p. 198; xxxv., 1916, p. 726; *Outlook for Blind*, x., 1917, p. 104; *Safety Engineering*, xxix., 1915, p. 33; *North American Review*, clxxvii., 1903, p. 766; *Technical World Magazine*, xix., 1916, p. 27; *Current Literature*, xxxiv., 1903, p. 337; *School Science and Mathematics*, xiii., 1913, p. 600; *Old Dominion Journal of Medicine and Surgery*, xx., 1915, p. 253; *American Journal of Tropical Diseases and Preventive Medicine*, ii., 1914, p. 56; *Ophthalmic Record*, i., 1891, p. 323; x., 1901, p. 557; xix., 1910, pp. 404, 509; xxi., 1912, p. 223; xxiii., 1914, p. 180; *American Medicine*, vi., 1903, p. 591; v. (n. s.), 1910, p. 406; ix., 1914, p. 41; *Pennsylvania Medical Journal*, xli., 1909, p. 375; xlii., 1910, p. 704; xlv., 1911, pp. 193, 195; xvi., 1913, p. 265; *New York Medical Journal*, lxxi., 1900, p. 775; lxxviii., 1903, p. 373; lxxix., 1904, p. 684; xciii., 1911, pp. 407, 604; *Journal of American Medical Association*, lviii., 1912, pp. 925, 947; lx., 1913, p. 588; lxi., 1913, p. 1110; lxix., 1917, p. 227; lxxv., 1920, p. 1109; lxxxvii., 1926, p. 482; *Medical Record*, lxiv., 1903, p. 207; lxvi., 1904, p. 1052; lxxx., 1911, p. 968; *Southern Medical Journal*, viii., 1915, p. 814; x., 1917, p. 130; *New York Lancet*, July, 1900; *Dietetic and Hygienic Gazette*, xix., 1903, p. 321; *American Journal of Ophthalmology*, xv., 1898, p. 97; xxviii., 1911, p. 181; xxxii., 1915, p. 173; xxxiv., 1917, p. 349; viii. (n. s.), 1925, p. 497; xlii., 1930, p. 387; xvi., 1933, p. 218; *Canadian Public Health Journal*, xxiii., 1932, p. 223; *Interstate Medical Journal*, xx., 1913, p. 545; *Journal of Kansas Medical Society*, xiv., 1914, p. 15; iv., 1904, p. 523; xxvi., 1926, p. 243; *St. Paul Medical Journal*, viii., 1905, p. 11; *Kentucky Medical Journal*, xii., 1914, p. 739; *American Practitioner and*

News, xl., 1906, p. 320; *West Virginia Medical Journal*, v., 1910, p. 49; x., 1915, p. 47; xxxiii., 1927, p. 193; *Ophthalmology*, xi., 1914, pp. 37, 42; xi., 1915, p. 677; *Journal-Lancet*, xxxiv., 1914, p. 647; *Journal of Tennessee Medical Association*, ix., 1917, p. 470; *Indianapolis Medical Journal*, xix., 1916, p. 190; *Northwest Medicine*, xx., 1921, p. 335; xxv., 1926, p. 490; *Southern California Practitioner*, xxvi., 1911, p. 488; *New Orleans Medical and Surgical Journal*, lxxiii., 1920, p. 11; *Virginia Medical Semi-Monthly*, xix., 1915, p. 448; *Journal of Indiana Medical Association*, viii., 1915, p. 285; xi., 1918, p. 265; xviii., 1925, p. 264; *Journal of Ophthalmology and Oto-Laryngology*, iv., 1910, p. 178; *Journal of Missouri State Medical Association*, ix., 1912, p. 35; xxix., 1932, p. 13; *Louisville Monthly Journal of Medicine and Surgery*, ix., 1902, p. 103; *Gaillard's Medical Journal*, lxxxi., 1904, p. 10; *Archives of Ophthalmology*, xxxvii., 1908, p. 406; xli., 1912, p. 333; *Pittsburgh Medical Review*, vi., 1892, p. 165; *Medical Review of Reviews*, xxii., 1916, p. 412; *Annals of Ophthalmology and Otology*, v., 1896, p. 454; *New York Polyclinic*, ix., 1897, p. 13; *Modern Hospital*, ix., 1917, p. 163; *Long Island Medical Journal*, i., 1907, p. 373; *Homeopathic Eye, Ear, and Throat Journal*, xv., 1909, p. 323; *Illinois Medical Journal*, liv., 1928, p. 139; lx., 1931, p. 250; *International Clinics*, i. (3rd s.), 1893, p. 314; iv. (21st s.), 1911, p. 215; *Johns Hopkins Hospital Bulletin*, xviii., 1907, p. 37; *Minnesota Medicine*, iv., 1921, p. 437; *Jeffersonian*, ix., 1909, no. 81; *Ohio Public Health Journal*, x., 1919, p. 418; *New York State Journal of Medicine*, xii., 1912, p. 283; *Sight Saving Review*, June, 1933, p. 105.

On ophthalmia neonatorum, trachoma, and other diseases causing blindness, see in general publications of National Society for Prevention of Blindness.

CHAPTER IV

BLINDNESS AND ACCIDENTS

CAUSES IN GENERAL OF ACCIDENTS AND INJURIES TO EYE

Accidents and injuries to the eye (together with other causes not attributable to disease)¹ constitute, as we have seen,² the leading single cause of blindness, being, together with sympathetic ophthalmia, responsible for practically one-sixth (16.5 per cent) of the entire amount in the United States. More or less akin to blindness from such causes is that from poisoning (0.9 per cent), malformations (0.4 per cent), and foreign substances in the eye (1.2 per cent)—together constituting 2.5 per cent. Other eye troubles with indefinite report may be included—exposure to heat (1.4), strained eyes (0.6), medical malpractice (0.6), wrong medicine or treatment (0.5 per cent), electric light (0.1 per cent), and exposure to cold (0.1 per cent)—these accounting for 3.3 per cent. That is, a little over one-fifth (22.3 per cent) of blindness is caused by external forces of some kind, or results from causes other than disease.³

Probably much the greater part of this loss of sight is to be set down to two things: to personal carelessness or neglect either on the part of the victim or on the part of his associates, and to the conditions of modern industry.⁴ Of the blindness which is to be attributed to the former, a certain slight portion is to be ascribed to the improper or excessive use of the eyes, this being mostly, but not altogether, the fault of the individual concerned. It is a matter of common knowledge that the organs of sight are subjected to frequent abuse, even though only impairment of the sight, and not full blindness, may be the consequence. The eyes are often employed in a poor light when a change could easily be made; while in too many instances they are overtaxed after they have earned a rest. With a great number of persons imperfect or defective eyesight is made worse by neglect or delay in having due examination and treatment at competent hands, or in having proper eye-glasses fitted.

In other cases the eye receives injury from the striking or penetrat-

¹ In this chapter are considered causes of blindness in general not arising from disease.

² See Chapter I.

³ On individual causes of blindness, as reported in legal cases, see Chapters XLIX-LII.

⁴ In many cases if the sufferers from eye injuries had the means, they could meet the immediate, and perhaps costly, treatment necessary for the saving of sight.

ing of it by some object from outside. This may be brought about in various ways. Very frequently harm comes from the entering into the eye of a cinder or other fine particle, and also from crude attempts at its removal; from shattered glass; and from loose or broken substances generally. Many eye accidents are suffered by both children and adults in the mishandling of small pointed instruments, as knives, scissors, pins, and the like. Other accidents are to be laid to the free use of toy pistols, air rifles, slingshots, fireworks, and similar devices used in sport or in celebration; and to gunshot wounds occasioned in hunting or otherwise. There is also damage to the eye from time to time in collision or sharp contact with divers objects.

A source of danger to the sight of a different kind lies in the use of the drug known as wood alcohol, or methyl alcohol, or wood spirits. There is little to fear from it in its original form, chiefly because of its uninviting odor and taste; but when these are removed, or when the liquid is "deodorized," or "rectified," and there is given the appearance of the regular grain alcohol, under various names, especially of "spirits" of one kind and another, it offers itself as a ready and comparatively inexpensive substitute for the grain alcohol. It remains, however, a deadly poison, from the swallowing or inhaling of even a very small quantity of which atrophy of the optic nerve or other form of blindness is liable to be induced. Improperly or inadequately labeled, and with little to indicate the true nature of its contents, it is sold in grocery and drug stores and in low-class liquor resorts. It is employed as a beverage; as a fuel in stoves and lamps; in the preparation of bay rum, witch hazel, and cosmetics, especially by barbers; as an adulterant in certain industrial processes; and for other purposes. There is also danger to the eye from other drugs, including tobacco, particularly from its excessive use.

To unfortunate operations performed upon the eye is to be attributed a small portion of blindness, most of which is due to unskilled or careless treatment. Injury is especially liable to result from the failure to employ antiseptic preparations, from the application of poultices, or from the resort to various nostrums.¹ In the use, also, of cheap and unsuited eye-glasses there is involved serious risk to the eyesight.

From the consideration of injuries consequent upon personal acts, for which the sufferer or his fellows is mainly responsible, we pass to that of injuries occurring for the most part in circumstances beyond the power of the individual to control, or under general social or in-

¹ On fraudulent eye remedies, see Report of Massachusetts Commission for Blind, 1914, p. 85; publications of American Medical Association.

dustrial conditions. Here, again, eyestrain is to be charged with certain baneful results; but in this case the blame is largely to attach to the surroundings involved.

Accidents of another kind occasioned in industrial processes, and more immediate in their results, are now to be considered. These are in the striking of the eye by objects, in the entry into it of injurious substances, or in other harmful action upon it, in certain occupations. They come mainly from flying bits from tools or materials, from the impact of parts of machinery or of other bodies, from intense light directed into the eye, and from contact with heated substances or with noxious chemical substances.

In work with abrasive wheels, including polishing, buffing, and grinding wheels, particularly when in rapid revolution, it is very easy for dust or other fine particles to fly into the eye.¹ In the chipping or cutting or driving of metal, or in the use of burred, "mushroomed" or otherwise defective tools, whether hand or power tools, the eye may be hit by chips or slivers.² The same is true to a large extent with the hewing or carving of minerals,³ and also with the cutting of wood.⁴ In sand blasting or in other spraying operations the eye is similarly exposed. In the bursting of boilers or of water or lubricator gauges fragments may be hurled into the eye. Like results are possible in bottling works, both from shattered glass and from popping corks. In the handling of explosives or in propinquity to them, there is peculiar peril to the sight. In the breaking of belts or in blows from other objects the eye is further threatened. In all cases where a foreign substance enters the eye, there is danger not only from punctures or lacerations, but also from subsequent irritation, made all the worse if infection happens to be conveyed.

When the eye is subjected to a powerful glare, there may result serious impairment of vision. This may occur in close and continued contact with a bright blaze; or with a highly shining surface, as in gilding and in work with mirrors and certain metals.⁵ From the in-

¹ This is especially the case in work with emery wheels and grindstones. There is similar danger in such operations as japanning and scaling.

² The operations involved are of various kinds. Most are concerned with iron and steel, though worse effects may be produced from other metals, especially brass and copper. Some of the most important of such operations are chipping, chiseling, riveting, reaming, drilling, cutting of rivet heads, cutting or turning of metal on machines, metal sawing, caulking, etc. When particles are heated, the consequences are likely to be the more hurtful. With the use of pneumatic tools the force of flying particles is increased.

³ Injury is possible not only from actual mining operations, but often also from the dusts arising therein.

⁴ Injury may be caused in chopping, sawing, and other splitting or cutting, not only from splinters and chips, but at times from dusts as well.

⁵ Extreme light (or radiant energy) is likely to irritate the conjunctiva or to cause degeneration of the retina.

tense heat necessary for the making of glass there is special liability to what is known as "glass-workers' cataract." Much danger also lies in the making of steel, and in other processes requiring great heat. In operations in connection with molten or superheated metals, or in connection with the cutting or soldering of metals by heat, in which a very high temperature is required, causing an intense light, the radiations produced may be most damaging.¹

The eye may suffer from the action upon it of hot substances or of noxious chemical substances. There may be contact with heated materials, which may include splashes from molten metals.² By various chemicals, particularly certain acids and alkalis, there is possessed a destructive power on the organs of sight. This may be manifested in either of two ways. First, there may be direct contact through the entry of particles from powdered matter, or from the spattering of liquids, the more hurtful if of a corrosive nature, or through the entry of fumes or gases, the more hurtful if of an acrid nature, whereby burns or other injuries are caused.³ Second, there may be affections of certain parts following the absorption of fumes or gases, or general toxemia. Some of the most harmful alkalis are soda, potash, lye, and ammonia. In many acids there is danger, probably most of all in sulphuric acid and nitric acid. The eye is particularly exposed to risk in work in chemical industries; in work with lime, a caustic acid being produced from the water mixed with it;⁴ in work with lead and its products;⁵ in work with the several alkalis used in the making of soap; in work with arsenic and Paris green, particularly in the making of wall paper and artificial flowers; in work in brass foundries, from sulphur and other fumes; in work with bisulphid of carbon in the manufacture of rubber; in work with nitrobenzol in the preparation of explosives; in

¹ Most harmful are the ultra-violet rays, and after them the infra-red rays. The chief processes involved are oxy-acetylene cutting, oxy-acetylene welding, arc welding, light and heavy spot welding, and lap welding. In foundries, rolling mills, blast furnaces, and like industrial plants there is danger both from the splashing of molten metal and from the radiations issuing therefrom. In the making of steel there are included open hearth work, Bessemer steel work, and work with blast furnaces, wrought iron furnaces, and electric furnaces. Special danger attends the pouring of steel. It also lies in cupola work, crucible steel work, puddling, and like operations. In babbiting work the eye is similarly exposed to risk. There is like hazard in connection with the oxy-hydrogen flame. In work with electricity a blow-out may be of an extremely dazzling character. Danger is also present in the tending of furnaces or fires generally, including those in engines of different kinds.

² Such is especially possible in tinning, printing, plumbing, enameling, smelting of metals, and other processes.

³ There are also embraced the hot sparks from emery wheels, and the scales thrown up from heated metal being hammered.

⁴ With cement made of lime and similar substances, there is not only danger in its manufacture and in its handling, but also in connection with the demolition of old structures into which it has entered.

⁵ In work with lead or arsenic there may be increased liability to atrophy of the optic nerve or to a form of retinitis.

work with naphtha in processes employing that substance; in work with certain of the aniline dyes in several lines; and in work with alcohol and tobacco, and with turpentine, quinine, and sundry other drugs.¹ The greatest single hazard is in connection with the employment of wood alcohol in industrial undertakings, this being no less an evil-doer here than elsewhere. Its use covers a wide range, entering into not a few trades. It is resorted to in the preparation of medicines, cheap whiskeys, illuminants, cleaning fluids, perfumes, cosmetics, tinctures, essences, and extracts of various kinds; as a solvent for gums, dyes, and resins, particularly for shellac, in the making of paints, varnishes, hats, etc.; in work with copper; and in other occupations. It is availed of to a greater or less extent in the varnishing of furniture, lead pencils, and other articles; in photo-engraving; in trades where aniline dyes are used, as in the manufacture of artificial flowers and in the coloring of plumes; in celluloid industries; and in the making of formaldehyde, enamels, and artificial leather.²

On farms also there is not infrequently danger to the eye. This may be in the repairing of agricultural tools or machinery; in the chopping of wood; in contact with animals; and from blades of corn, from heads of wheat, and from other growths.

OCCUPATIONS IN WHICH ACCIDENTS TO EYE OCCUR

Statistical information with respect to causes of injuries to the eye is furnished in certain reports relating to accidents or to general industrial conditions in particular areas or in particular fields. From them there may be indicated first in what occupations or activities accidents to the eye are most likely. In the following table is given the percentage distribution of injuries to the eye causing permanent disability of that organ among persons carrying casualty insurance in the Travelers Insurance Company (1921-1924) according to occupation, these constituting a limited cross-section of the general population.³

Here is apparent the outstanding danger to the eye from metal working industries, some two-fifths of all injuries to the eye being so attributable.⁴

¹ Poisonous substances especially likely to affect the eye are phosphorus, dimethyl sulphate, and methyl bromide.

² Wood alcohol has been particularly employed in breweries for the coating of the insides of beer vats.

³ Statistics based upon figures from Louis Resnick and L. H. Carris, "Eye Hazards in Industrial Occupations," 1924, p. 17.

⁴ Among industrial workers in the State of Pennsylvania (1924-1926) over three-tenths of cases of loss of an eye occur in work with metals and metal products, and over one-third in mining operations. Report of Pennsylvania Department of Labor and Industries, xiii, 1927, 3, March, p. 19.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF PERMANENT INJURIES TO EYE ACCORDING TO OCCUPATION
AMONG INSURANCE POLICY HOLDERS

<i>Occupation</i>	<i>Per Cent Distribution</i>
Total.....	100.0
Metal manufacturing.....	40.5
Woodworking.....	9.8
Foundries.....	7.3
General labor (digging, etc.).....	6.0
Coal mining.....	5.9
Chemical industries.....	5.3
Quarrying and stone cutting.....	5.3
Masonry and concrete work.....	4.9
Stores.....	4.9
Carpentry.....	4.3
Farming.....	1.7
Textile industries.....	1.1
Miscellaneous.....	3.0

More significant may be the bringing out, in the contrasting of the proportions for accidents to the eye with the proportions for accidents of all kinds taken together, in the several occupations, or the particular liability to the eye to be incurred in each. This is possible with respect to a more restricted group, or among industrial workers. In the following table is given, according to general occupation, the percentage distribution of all accidents, of those to the eye, and of those to both eyes, as found in the State of Illinois (1929).¹

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO OCCUPATION
IN ILLINOIS

<i>Occupation</i>	PER CENT DISTRIBUTION		
	<i>All Accidents</i>	<i>Accidents to One Eye</i>	<i>Accidents to Both Eyes</i>
Total.....	100.0	100.0	100.0
Agriculture and extraction of minerals.....	15.0	27.2	21.3
Coal mining.....	13.9	25.6	20.3
Manufacturing.....	44.0	43.8	42.5
Food products.....	6.9	3.3	2.0
Lumber and lumber products.....	2.0	2.2	2.0
Metals and metal products.....	21.8	29.8	23.3
Stone, clay, and glass products.....	1.7	1.5	1.0
Construction.....	15.1	12.2	14.1
Transportation.....	7.3	4.1	5.0
Trade.....	9.1	0.5	7.0
Miscellaneous.....	9.7	12.2	10.1

Here is demonstrated the constant peril to the human eye in coal mining, the percentage being practically twice as great for it as with

¹ Report of Illinois Department of Labor, 1931.

respect to all accidents. It is also greater in the case of work with metals and metal products. With the exception of trade, there seems as a general thing no large difference as between the proportions for one eye and the proportions for both.¹

Similarly to be ascertained is the relative severity of accidents to the eye, or to what extent there results injury to it, in various occupations. In the following table is given the percentage distribution of the total number of accidents to the eye, of those involving enucleation, of those involving total blindness, of those involving permanent partial disability, and of those of temporary nature only, for different occupations, as found in Wisconsin (1924-1927).²

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO OCCUPATION
IN WISCONSIN

OCCUPATION	PER CENT DISTRIBUTION				
	<i>Total</i>	<i>Enucleation</i>	<i>Total Blindness</i>	<i>Permanent Partial Disability</i>	<i>Temporary Injury</i>
Total	100.0	100.0	100.0	100.0	100.0
Agriculture	1.7	0.8	1.2	2.8	1.6
Mines and quarries	3.9	3.2	3.5	3.4	4.2
Chemical industries	1.0	0.8	1.2	1.4	1.0
Clay, glass, and stone products	1.9	0.8	2.3	1.4	1.9
Foods, beverages, and tobacco	3.6	6.3	1.8	4.1	3.4
Leather and leather products	1.3	....	0.6	0.4	1.6
Lumber and lumber products	14.2	23.5	19.0	11.9	13.8
Metal and metal products	15.7	15.6	10.9	14.9	16.3
Machinery	14.4	11.0	9.2	20.0	14.5
Paper and paper products	3.6	3.2	4.6	3.1	3.6
Rubber and composition goods	0.9	....	....	0.7	1.0
Textiles	0.9	....	1.8	0.7	0.8
Vehicles	5.7	4.0	6.3	8.0	5.4
Other manufacturing and mechanical industries	0.8	1.6	....	0.7	0.6
Excavating	1.0	0.8	3.5	0.3	1.0
Grading and engineering	2.6	4.0	3.5	1.0	2.4
Building and demolishing	7.8	6.3	10.5	7.9	7.9
Interior finishing and equipping	3.8	2.4	2.3	3.4	4.2
Trade	3.6	2.4	5.4	1.0	3.8
Personal and professional service	1.5	1.6	1.2	2.0	1.4
Public utilities and transportation	10.1	11.7	13.2	10.9	9.6

¹ In Massachusetts (1916) the percentage of cases of loss of eye in the extraction of minerals is practically six times as great as the percentage for all accidents therein, in chemical and allied industries four times, in building trades and transportation two times, and in iron and steel manufacture one and a half times. Report of Massachusetts Industrial Accident Board, 1916. In Minnesota (1909-1914) the percentage of accidents to the eye is three times as great as the percentage of all accidents in railroad shops, and twice as great in foundries and machine shops. Report of Minnesota Department of Labor and Industries, 1915.

² Wisconsin Labor Statistics, no. 13, April, 1929.

Work of construction (including excavating, etc.) appears especially dangerous to the eye. Such is also the case in less degree with regard to work in lumber and lumber products, transportation (including vehicles and public utilities), and a few other occupations. Here the hazard from heat, the use of saws, etc. is apparent.¹

In the following table is given for different occupations the accident frequency rate (number of lost-time accidents per 1,000,000 man-hours exposure) and the accident severity rate (number of days lost per 1000 man-hours exposure) for loss of one eye in different occupations in certain States taken together (1927).²

FREQUENCY AND SEVERITY RATES FOR LOSS OF EYE AMONG DIFFERENT OCCUPATIONS
IN CERTAIN STATES

<i>Occupation</i>	<i>Accident Frequency</i>	<i>Accident Severity</i>
Total	0.10	0.18
Agricultural implements	0.19	0.34
Automobile	0.14	0.25
Automobile tires	0.06	0.11
Boots and shoes	0.01	0.03
Brick	0.05	0.09
Carpets	0.05	0.10
Chemicals	0.14	0.25
Cotton goods	0.01	0.02
Electric machinery	0.08	0.15
Foundries and machine shops	0.17	0.30
Furniture	0.07	0.13
Glass	0.03	0.05
Hardware	0.05	0.10
Lumber—planing mills	0.09	0.17
Lumber—saw mills	0.25	0.46
Paper and pulp	0.09	0.16
Machine tools	0.05	0.11
Petroleum refining	0.10	0.18
Shipbuilding, steel	0.13	0.23
Slaughtering and meat packing	0.05	0.09
Stamped and enamel ware	0.08	0.14
Steam fittings, apparatus, and supplies	0.19	0.35
Stoves	0.20	0.35
Structural iron work	0.13	0.24

In the order of their severity rates, the occupations carrying the greatest peril to the eye are sawmills, steam fitting industries, stove industries, industries making agricultural implements, foundries, automobile industries, chemical industries, structural iron making, and shipbuilding. So far as severity rates may be contrasted with

¹ In California (1912) the most serious risks to the sight lie mainly in work with metals and machinery, oil, power and light, in construction work, and in mines and quarries. Report of California Industrial Accident Board, 1912.

² *Monthly Labor Review*, xxvi., 1928, 1, Jan., p. 73. See also Bulletin of United States Bureau of Labor Statistics, no. 216, 1917, p. 55; no. 234, 1918, *passim*; no. 298, 1922, p. 121.

frequency rates, the largest danger seems to lie in industries involving the use of steel in manufacturing, and also to a lesser extent in wood-working industries.

MEANS BY WHICH ACCIDENTS TO EYE ARE CAUSED

Our next task is to consider from what particular or immediate means or instruments are occasioned injuries to the eye.¹ Representing a cross-section of the country, so far as is indicated in the State of Missouri, there is given in the following table the percentage distribution of the means of causing blindness among blind persons who re-

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO MEANS IN MISSOURI

<i>Means of Accident</i>	<i>Per Cent Distribution</i>
Total	100.0
Dynamite and gunpowder explosion	24.2
Gunshot	15.2
Wood (kindling and chips)	5.2
Knife	5.1
Tree (twigs and branches)	4.8
Stick	4.6
Nail	4.0
Steel (flying particle)	3.4
Rock	2.7
Dynamite cap and gun cap	2.4
Explosions (other than above)	2.0
Fall	2.0
Cornstalk	2.0
Blows	2.0
Missiles	1.6
Scissors	1.1
Toy cannon	0.8
Kick	0.8
Glass	0.6
Wire	0.6
Miscellaneous	14.9

¹ From preceding tables giving the several causes of blindness (*ante*, Chapter I), we learn that about one-eighth (13.5 per cent) of all blindness from accidents and injuries is due to explosives, including those in mines and quarries, those in construction and similar work, and those from bursting shells in military actions; about one-tenth (10.6 per cent), to firearms of some kind; 6.4 per cent, to flying objects (not occurring in explosions); 6.4 per cent, to falls; 5.5 per cent, to cutting and piercing instruments; 1.9 per cent, to burns; and the remainder to miscellaneous causes (including unfortunate results of operations, operations in mines and quarries not involving explosions, machines, etc.). Of blindness resulting from foreign substances in the eye, a little under two-thirds is due to acids and other substances of chemically destructive nature, and a little over one-third to dust and other particles. Of blindness resulting from poisoning the leading cause is wood alcohol; followed by chronic lead, tobacco, alcohol other than wood alcohol, chronic occupational poisoning other than from lead, and other forms of poisoning. Among the several kinds of accidents, some difference is found with regard to the period of life of their most frequent occurrence. Injuries to the eye from cutting and piercing instruments are most common in the early years of childhood, being the leading cause among accidents from the first to the ninth year, after which time they decrease more or less rapidly. In-

ceive pensions in this State (1923), and whose loss of sight is attributable to accidents (including sympathetic ophthalmia).¹

Notable is the proportion of cases of loss of sight from explosions of dynamite (including gunpowder), or about one-fourth of all. Notable also is the proportion from gunshot, or about one-seventh. For the remainder a variety of objects are responsible.²

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO MEANS AMONG CHILDREN AT PLAY

<i>Means of Accident</i>	<i>Per Cent Distribution</i>
Total.....	100.0
Weapons.....	31.0
Air rifles and small calibre weapons.....	12.0
Blank cartridge and cap pistols.....	3.0
Slingshots and rubber band flippers.....	7.0
Stones and other objects used as missiles.....	3.0
Other.....	6.0
Fireworks.....	23.0
Firecrackers.....	13.0
Torpedoes and bombs.....	8.0
Other.....	2.0
Explosives.....	10.0
Gunpowder and dynamite.....	6.0
Other.....	4.0
Sharp-pointed objects.....	11.0
Knives and scissors.....	3.0
Sticks, nails, wires, etc.....	8.0
Flying particles.....	8.0
Chips of steel, wood, glass.....	5.0
Dust, sand, etc.....	3.0
Games and sports.....	5.0
Automobile accidents.....	4.0
Falls.....	3.0
Burns (hot objects, chemicals, etc.).....	2.0
Miscellaneous.....	3.0

juries from falls happen most often in the period from five to nine, though they are notable also later in life. Injuries from firearms are of greatest frequency in the late years of youth, being the foremost cause from the tenth to the nineteenth year, after which time there is a gradual decrease. Injuries from explosives show the largest proportions in early and middle adult life and in youth, or during the most active working period, representing from the twentieth to the sixty-fifth year the chief cause of blindness from accidents. Injuries from burns, though fairly constant through life, reach their highest mark towards middle life. Injuries from flying objects are at their highest point in late youth, with relatively considerable proportions subsequent and prior to this period. Blindness from exposure to heat, from foreign substances in the eye, and from poisoning are, like injuries from explosives, of greatest frequency during the working period of life. Blindness from strained eyes increases with advancing years.

¹ *Journal of Missouri State Medical Association*, xxiii., 1926, p. 179.

² Among persons insured in the Travelers Insurance Company who suffer injury to the eye, the means, with the respective percentages, are as follows: flying bodies, 78.9; tools or movable parts of machines, 7.8; splashing liquids, 6.8; explosions, 2.9; falls, 2.8; infections, 0.8. Almost four-fifths are due to flying bodies. Louis Resnick and L. H. Carris, *op. cit.*, p. 18. In a number of other States somewhat similar results are found. Of accidents in New York State, the causes (with percentages) are as follows: firearms, 4; cutting

In the preceding table is given the percentage distribution of the means of accidents to the eyes of children at play, as found in newspaper accounts for a given period of time (June, July, and August, 1931).¹

More than one-half of these accidents are seen to occur from two sources—weapons and fireworks. With the inclusion of explosives, almost two-thirds are accounted for. Quite apparent is the danger to the eyes of children from the handling or the use of so-called “toys” by children.²

In the following table is given according to form of accident the percentage distribution of all accidents, of accidents to the eye, and of accidents to both eyes, as found among industrial workers in Illinois (1929).³

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO MEANS IN ILLINOIS

Means of Accident	PER CENT DISTRIBUTION		
	All Accidents	Accidents to Eye	Accidents to Both Eyes
Total	100.0	100.0	100.0
Electricity	0.5	0.3	22.2
Explosions	0.7	0.9	11.1
Falling objects	9.7	2.4	2.0
Fall of person	15.7	0.8	1.0
Handling object	22.6	1.8	1.0
Hand tools	6.0	32.5	2.0
Hot substances	3.7	5.5	7.1
Machinery	15.8	16.2	6.1
Poisonous and corrosive substances	0.9	5.5	29.4
Striking object	8.9	13.7	2.0
Vehicles	10.1	1.0	....
Flying particles	0.6	16.2	11.1
Miscellaneous	4.8	3.2	5.0

Here the danger from flying objects is well over two score times as great to one eye as to all parts of the body together, from poisonous and corrosive substances six times, and from hand tools five times. or piercing instruments, 30; blows, 12; mines and quarries, 10; burns, 12; miscellaneous and unknown, 36. Report of New York Commission for Blind, 1928, p. 38. On age of occurrence, kind of specialist employed, time elapsed before application of aid, and time elapsed before loss of sight, see *ibid.*, pp. 41-43. Of accidents to the eye of which reports have been collected by the National Society for the Prevention of Blindness, 8.5 per cent are from automobiles (most being from shattered glass). *Sight Saving Review*, June, 1933, p. 127.

¹ *Ibid.*, June, 1932, p. 92. See also *ibid.*, March, 1932, p. 4; Sept., 1932, p. 204; *Safety Engineering*, lxiv., 1932, p. 11.

² It is estimated that in Fourth of July celebrations there are several cases of loss of both eyes every year, and one or two score of loss of one. From 750 to 1000 children in the United States are believed to suffer accidental eye injuries every year, about 70 of them being blinded. Most children in schools for the blind who are blind from accidents owe their condition to the use of fireworks, air rifles, and other toy weapons. From compilations of National Society for Prevention of Blindness.

³ Report of Illinois Department of Labor, 1931.

The proportion is also greater in the case of striking objects, hot substances, and explosions. Danger to both eyes is many times greater than to one in the case of electricity, a considerable number of times greater in the case of explosions, and several times greater in the case of poisonous and corrosive substances. The proportion is also greater in the case of hot substances. With hand tools and machinery the danger seems mainly to be restricted to one eye.¹

In the following table is given the percentage distribution of the total number of accidents and of accidents to the eye for which compensation is granted, according to the several means by which they were caused (among those with not less than 0.5 per cent for the eye), as found in New York State (1924).²

In metal working machinery accidents to the eye are over two times as likely as accidents in general; in abrasives they are nine times as likely, and in riveting eight times. Corrosives are practically a score of times as dangerous to the vision, lime being practically two score of times, and cement, acids, alkali, and irritants some half score of times; in fact, harm from these substances may be said to be almost wholly confined to the eye. Flying objects in general are nearly thirty times as injurious to the eye; most of these flying objects are of metal, though the peril is by no means restricted to this kind. The eye suffers six times as much in the breaking of articles as do all parts of the body together. From the use of hand tools there is an abnormally high proportion of accidents to the eye. Both heat and electricity are somewhat more dangerous to the eye than to the rest of the body taken together; molten metal is twice as much so. (It appears also that not less than one-half of all accidents to the eye are attributable to flying objects—some from the use of hand tools and some other-

¹ In Ohio (1915) the percentage of cases of loss of an eye from hand tools and simple apparatus is four times as great as that for all accidents occurring therefrom; and the percentage with respect to grinding and polishing wheels, lathes, and nature of material about three times as great. Ohio Industrial Commission, Bulletin, iii., 1916, 1, March, pp. 32, 194. In Pennsylvania (1913) the percentage of accidents to the eye is from emery wheels seven times as great as that for all accidents from that cause; from flying materials over six times; from chips from tools over four times; from burns from hot metal, flue dust, or flames three times; from burns of other kinds over two times; and from explosions one and one-half times. Report of Department of Labor and Industries, 1913. In Indiana (1913) the percentage of accidents to the eye from polishing machinery is nearly five times that for all injuries so caused; and from flying objects, four times. The consequences of the latter kind are likely to be severe, but not of the former kind. Report of Indiana Board of Inspection, 1913. In Massachusetts accidents from hand tools are almost six times as frequent to the eye as to all parts of the body taken together. In New York the greatest excess proportions for accidents to the eye over accidents in general are in the case of hot substances, or ten times as great; handling of tools, or over three times as great; electricity, explosives, heat, etc., or two times as great; and machinery, or a little greater. See *post*, p. 679. See also Proceedings of National Society for Prevention of Blindness, 1929, p. 28.

² New York State Department of Labor, Special Bulletin no. 142, March, 1926.

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PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO MEANS IN
NEW YORK STATE

MEANS OF ACCIDENT	PER CENT DISTRIBUTION	
	<i>All Accidents</i>	<i>Accidents to Eye</i>
Total	100.0	100.0
Machinery	14.9	15.5
Power machinery	13.7	15.4
Metal working	4.9	11.8
Abrasives	0.5	4.8
Drills	0.2	0.5
Lathes, etc.	0.2	0.9
Riveters, etc.	0.3	2.4
Presses	1.8	0.8
Punches, etc.	1.7	0.7
Woodworking	2.8	2.3
Saws	1.8	1.6
Hoisting and conveying apparatus	3.8	0.8
Vehicles	8.5	0.5
Explosives, electricity, and burns	4.5	9.1
Explosive substances	0.4	0.9
Electricity	0.5	0.7
Hot substances	3.4	7.3
Molten metal	1.2	4.7
Poisonous and corrosive substances and occupational diseases	1.4	15.0
Corrosive substances	0.8	14.5
Lime	0.2	8.6
Cement	...	0.9
Acids	0.2	2.9
Alkali	0.1	1.1
Irritant	0.1	0.9
Striking against objects	4.6	1.4
Falling objects	6.6	1.3
Handling of objects	26.9	2.0
Heavy	19.2	1.2
Sharp or rough	5.5	0.7
Handling of tools	6.6	28.6
Own tools	6.0	26.9
Glancing or slipping	4.5	1.6
Breaking	0.1	0.1
Flying pieces	0.9	24.4
Nails and spikes	0.1	4.0
Metal chips	0.5	11.1
Stone	0.2	6.4
By others	0.6	1.9
Flying pieces	0.1	1.6
Metal chips	0.1	0.9
Flying particles (not elsewhere included)	0.8	23.1
Miscellaneous (not elsewhere included)	21.4	2.7

wise. To these, together with machinery, are due two-thirds; together with corrosives, four-fifths; and together with explosives, nine-tenths. With machinery the larger part is from metal working apparatus.)

In the following table is given the percentage distribution of the total number of accidents to the eye, of those of a temporary nature, of those involving enucleation, of those involving total loss of sight,

of those involving from 50 to 99 per cent loss, and of those involving from $16\frac{2}{3}$ per cent to 50 per cent, loss, according to means of accident, as found in Wisconsin (1924-1927).¹

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO MEANS IN WISCONSIN

MEANS OF ACCIDENT	PER CENT DISTRIBUTION					
	<i>Total</i>	<i>Temporary</i>	<i>Enucleation</i>	<i>Total Loss</i>	<i>Loss 16$\frac{2}{3}$ to 50 Per Cent</i>	<i>Loss 50 to 99 Per Cent</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Woodworking machinery.....	4.5	3.9	6.1	6.4	4.0	14.3
Metal working machinery.....	14.6	15.4	12.2	7.9	16.0	1.2
Textiles.....	0.4	0.4	0.6	....	....	....
Building and engineering.....	1.0	1.2	0.8	0.6	0.5	....
Cranes and derricks.....	0.5	0.3	1.6	0.6	1.0	....
Automobiles, etc.....	0.6	0.5	1.6	1.2	1.0	....
River rafting.....	0.5	0.5	1.6	0.6	....	....
Falling trees.....	1.2	1.2	2.4	1.8	0.5	....
Fall of person.....	0.9	1.1	0.8	0.6	0.5	....
Striking against object.....	8.9	8.9	10.7	9.9	7.5	7.1
Use of hand tools.....	11.6	9.1	26.7	26.1	16.0	17.9
Use of other tools.....	7.4	6.5	11.4	12.2	10.5	4.7
Handling of object.....	1.4	1.5	0.8	0.6	1.3	2.4
Electricity.....	0.5	6.6	....	0.6	....	....
Explosives.....	2.5	1.9	6.1	4.6	4.5	3.6
Hot and corrosive substances..	10.7	12.0	3.8	3.7	10.0	5.9
Flying particles.....	16.1	28.9	8.4	16.3	21.5	15.5
Miscellaneous.....	4.2	4.6	5.0	8.0	3.0	10.8

Here accidents to the eye which are of most serious nature arise from the use of hand tools and of other tools, from woodworking, together with lumber work, from certain forms of construction work, from explosives, from automobiles, and from the striking of objects.²

¹ Wisconsin Labor Statistics, no. 13, April, 1929.

² In Massachusetts (1915) the percentages of loss of an eye are several times greater than for accidents to the eye in general in the case of molten metal, electric flash, breaking of belts, hammering operations, riveting, and the breaking of lubricator or gauge glasses. Report of Massachusetts Industrial Board, 1915, p. cli.; Report no. 13, Safety Handbook of Massachusetts Employers Association, 1912; D. S. Beyer, "Industrial Accident Prevention," 1916, p. 371. In Wisconsin (1913) the percentage of loss of eye is five times greater than for all accidents to the eye in the case of belts; four times, in the case of flying nails; two times, in the case of riveting; and somewhat greater, in the case of chipping operations. Wisconsin Industrial Commission, Bulletin, 1913, ii., no. 7; Bulletin of United States Bureau of Labor Statistics, no. 157, 1915, p. 96. Among Federal employees (from 1908 to 1913) the percentage of loss of an eye is nine times as great as that for all accidents to the eye in the case of explosions, and two times in the case of hand tools. The percentage for both eyes in the case of explosions is far higher. *Ibid.*, Sept., 1914, no. 155. In New York (1912) there is a somewhat disproportionate number of eye accidents, as compared with accidents of all kinds, in factories, especially in the use of mechanical power, though apparently not many of these eye accidents have serious consequences. The hazard to the eye is evident in work with metal working machinery, particularly in drilling and milling operations. In work with lathes the danger is marked, the proportion of eye accidents being more than double the proportion of all accidents; and the effects are often of a permanent character. Even greater peril is manifest in the employment of power tools, the proportion of eye accidents being five times the normal, and that in respect to serious

In the following table is given the average amount of compensation granted for accidents to the eye, according to different means, as found by the National Bureau of Casualty and Surety Underwriters (1919).¹

COMPENSATION FOR ACCIDENTS TO EYE BY DIFFERENT MEANS

<i>Means of Accident</i>	<i>Compensation</i>
Total.....	\$346
Power working machinery.....	290
Abrasives.....	141
Drills.....	342
Metal working machinery.....	337
Portable power tools.....	353
Power presses.....	406
Woodworking machinery.....	442
Cranes, hoists, etc.....	324
Explosives, electricity, hot and corrosive substances.....	359
Corrosives.....	169
Explosives.....	831
Molten metal.....	378
Handling of tools and objects.....	438
Flying particles not elsewhere classified.....	389

In the order of their seriousness with reference to the amount of compensation, the means responsible for accidents to the eye may be arranged as follows: explosives, power presses, woodworking machinery, handling of tools and objects, flying particles (not elsewhere included), molten metal, portable power tools, drills, general metal working machines, and cranes.

MANNER IN WHICH ACCIDENTS TO EYE ARE OCCASIONED

The means by which injuries to the eye are suffered may be indicated statistically in still another respect—the form or manner in which the eye is affected by them.² The means of injury to one eye ones much greater still. The risk is perhaps most pronounced in work with polishing machines, especially from fragments thrown off, though the injuries involved are not frequently of a lasting character. In contact with heat and electricity the proportion of eye injuries is twice that of injuries of all kinds, while the proportion in respect to serious injuries to the eye is considerably greater still. Injuries from explosions are particularly likely to be of a severe nature. With caustics the percentage of eye injuries is six times above the normal rate, though most appear to be but temporary. The liability of eye accidents from molten metal is also noticeable. Accidents from hand tools do not exhibit any particular tendency in respect to the eye, but when they do affect it the consequences are often permanent. In flying objects of various kinds the greatest danger of all to the sight seems to exist. From them the proportion of eye injuries is nine times the proportion of injuries of all kinds, and the difference with respect to injuries of permanent nature is double this. In building and engineering operations, permanent injuries to the eye from heat and electricity show a proportion over four times greater than that for permanent injuries of all kinds, injuries from blasts being the most disastrous. Danger from hand tools in these operations is also considerable, the percentage of serious eye injuries being eight times that for all serious injuries. Accidents to the eye from flying objects likewise deserve attention. New York State Department of Labor, Bulletin, no. 68, Dec., 1914.

¹ *Monthly Labor Review*, xvi., 1923, 3, March, p. 110. See also *passim*.

² Statistics are taken from reports of State industrial accident boards, departments of

in Illinois are distributed in percentages as follows: enucleation, 0.8; bruises, contusions, and abrasions, 21.1; burns and scalds, 9.9; cuts and lacerations, 20.7; punctures, 14.9; infections, 4.4; inflammations, 27.1; and others, 1.1. For both eyes the respective percentages are 0.01, 11.5, 30.2, 1.1, 6.7, 9.4, 37.5, and 3.6. Among employees under the United States Compensation Commission the percentages for one eye are bruises, contusions, and abrasions, 6.5; burns and scalds, 12.3; cuts, punctures, and lacerations, 9.5; and miscellaneous, 71.7. For both eyes the respective percentages are 3.1, 37.2, 2.5, and 56.7. Of all injuries to the eye of the nature of bruises, contusions, and abrasions, those to the eye constitute 1.3 per cent; of burns and scalds, 13.4 per cent; and of cuts, punctures, and lacerations, 2.5 per cent.¹

In general, when one eye is involved, the most frequent source of injury lies in cuts, punctures, and lacerations. Next in some areas are bruises, contusions, and abrasions; and in other areas, burns and scalds.² When foreign bodies are specified, such may rank as high as third. Infection or inflammation may likewise have a place. When both eyes are involved, burns and scalds usually constitute the foremost form. These are followed by bruises, contusions, and abrasions, and by cuts, punctures, and lacerations. The proportion with respect to both eyes is as a rule about three times as great as that with respect to one eye in the case of burns and scalds; about one-half or one-third as great in the case of bruises, contusions, and abrasions; and about one-fourth or one-fifth as great in the case of cuts, punctures, and lacerations. It is about two times as great in the case of infection, and somewhat greater in the case of inflammation. It is somewhat less in the case of foreign bodies in the eye. In other words, in the event of injury to the eye from burns and scalds, there is a high chance of both eyes being affected. With bruises and like injuries such danger is relatively infrequent. With cuts and like injuries it is rather seldom to be expected. Should infection be a result, there is an increased chance of its reaching both eyes.

In the following table is given according to form of accident the percentage distribution of accidents to the eye of all kinds, of those involving permanent total disability, of those involving permanent

labor, etc. Of Fourth of July accidents about two-thirds are burns, and one-third lacerations.

¹ For conditions in New York and Massachusetts, see *post*, pp. 149, 680. In Table IX in Appendix A is given the percentage of accidents to one eye and to both eyes, according to the form or manner of their occurrence among various occupations in the State of Ohio. (Report of Ohio State Industrial Commission, 1927.)

² With respect to number of days lost cuts and lacerations have priority in the case of one eye and in the case of both eyes alike. See Report of Ohio State Industrial Commission, 1927.

partial disability, and of those involving temporary disability, together with the average number of weeks lost for each form among the two latter groups, as found in New York State (1930).¹

PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE ACCORDING TO FORM IN NEW YORK

FORM OF ACCIDENT	PER CENT DISTRIBUTION				WEEKS LOST	
	TOTAL	PERMA- NENT TOTAL	PERMA- NENT PARTIAL	TEMPO- RARY	<i>Perma- nent Partial</i>	<i>Tempo- rary</i>
Total.....	100.0	100.0	100.0	100.0	99.1	3.4
Cuts, punctures, and lacerations.....	46.8	50.0	66.2	39.9	109.8	3.4
Burns and scalds.....	23.9	20.0	15.3	26.9	71.8	3.8
Foreign bodies.....	13.7	....	9.0	15.4	80.4	2.4
Bruises, contusions, and abrasions.....	12.7	20.0	8.0	14.5	81.7	2.8
Other.....	2.9	10.0	1.5	3.3	108.8	8.9

Here the most serious consequences to the eye, as well as of the most frequent occurrence, are in the case of cuts, punctures, and lacerations. Next come burns and scalds.

In the following table is given the percentage distribution of accidents in general and of those to the eye according to form of injury, and of those resulting in infection, together with the percentage in both cases with respect to injuries to the eye among all injuries, and with the percentage of infections among all injuries and among those to the eye, in New York (1925).²

PERCENTAGE OF ACCIDENTS TO EYE WITH INFECTION ACCORDING TO FORM IN NEW YORK

FORM OF ACCIDENT	PER CENT DISTRIBUTION				PER CENT OF TOTAL			
	ALL ACCIDENTS		ACCIDENTS WITH INFECTION		ACCIDENTS TO EYE		ACCIDENTS WITH INFECTION	
	<i>All Acci- dents</i>	<i>Acci- dents to Eye</i>	<i>All Acci- dents</i>	<i>Acci- dents to Eye</i>	<i>All Acci- dents</i>	<i>Acci- dents Infected</i>	<i>All Acci- dents</i>	<i>Acci- dents to Eye</i>
Total.....	100.0	100.0	100.0	100.0	2.9	1.2	11.9	5.0
Bruises, contusions, and abrasions....	19.6	13.3	13.1	16.9	2.0	1.6	8.4	6.5
Burns and scalds....	5.2	22.0	2.9	10.7	14.1	4.6	6.6	2.2
Cuts, punctures, and lacerations.....	35.2	52.8	80.9	38.4	4.0	0.6	27.1	4.1
Foreign bodies.....	0.3	10.1	0.4	29.5	100.0	100.0	14.4	14.4
Other.....	39.7	1.8	2.7	4.5	0.2	3.5	0.4	10.4

¹ New York State Department of Labor, Bulletin, no. 170, 1931.

² New York State Department of Labor, Bulletin, no. 146, July, 1926.

With respect to accidents as a whole foreign bodies are likely to affect the eye far more than they do the remainder of the body—in fact, such damage therefrom may be said to be almost altogether confined to the eye. The ratio for the one is over thirty times as great for the one as for the other. Harm to the eye is also the more likely than to other parts of the body in the case of burns and scalds and in the case of cuts, punctures, and lacerations, the ratio for the former being four times as great, and for the latter one and one-half. In the event of infection after injury from foreign bodies, the eye is particularly subject to attack. The ratio for it is seventy times that for other parts of the body taken together. The ratio for burns and scalds is over three times as great. The ratio is also greater for bruises, contusions, and abrasions. The danger of infection is relatively least in the case of cuts, punctures, and lacerations, followed by burns and scalds and by bruises, contusions, and abrasions. It is greatest in the case of foreign bodies. As a general thing the eye is less susceptible to infections than is the remainder of the body taken together, seemingly less than half as much so.¹ It is also freer with respect to all forms of accidents with the single exception of foreign bodies.²

From all these statistics relating to the cause, circumstance, occasion, means, manner, or form of injuries to the eye, there have emerged certain results. In practically all the occupations in which men are engaged accidents to the organ of vision are possible, though in widely varying degree. There appears to be a particular likelihood of them in industries in general in which metal is employed, whether as tools or machinery or materials. Always of serious menace to the eye is mining (especially coal mining). In certain other industries, whether of

¹ The order of the several forms of injuries to the eye remains little changed, whether or not infections are involved. Report of Ohio State Industrial Commission, 1927. On causes of accidents to the eye on railroads, see Louis Resnick and L. H. Carris, *op. cit.*, p. 11; *Monthly Labor Review*, xxv., 1927, 3, Sept., p. 51.

² On causes of accidents to the eye, see also National Committee for Prevention of Blindness, Publications, 1917, no. 12, "Eye Hazards in Industrial Occupations" (G. L. Berry), p. 12; Bulletin of United States Bureau of Labor Statistics, 1914, no. 155; 1915, no. 157, pp. 52, 96, 164, 186; 1917, no. 216, p. 108; no. 298, 1922, p. 121; no. 490, 1929, p. 115; Bulletin of Bureau of Labor, no. 78, Sept., 1908; no. 84, Sept., 1909; Report of Illinois Bureau of Labor Statistics, 1912, 1913; Report of Minnesota Bureau of Labor, Industries, and Commerce, 1910, p. 127; Report of Michigan Employers' Liability and Workmen's Compensation Commission, 1911, p. 79; Report of Massachusetts Commission on Compensation for Industrial Accidents, 1912, p. 141; Report of Illinois Employers' Liability Commission, 1910, p. 245; Report of Wisconsin Special Committee on Industrial Insurance, 1910, p. 87; Report of Massachusetts Commission on Compensation for Industrial Accidents, 1912, p. 107; Bulletin of Pennsylvania Department of Labor and Industry, Jan., 1926, p. 163; Industrial Bulletin of New York State, Sept., 1927; Interstate Commerce Commission, Accident Bulletin, no. 62, 1917; Report of Massachusetts Commission for Blind, 1912, p. 59; Louis Resnick and L. H. Carris, *op. cit.*, *passim*; *Annals of American Academy of Political and Social Science*, cxix., 1926, p. 163; *Monthly Labor Review*, xvii., 1923, 5, Nov., p. 3; xix., 1924, 6, Dec., p. 1317; *Labor and Industry* (Pennsylvania), xix., 1932, 2, Feb., p. 61.

extraction or manufacturing or mechanical, also there is notable danger.

The real issue in the matter, however, is not the particular industry concerned, but rather the nature or the manner of the operations carried on in each. In activities having to do with metal of some kind, especially when with a sharp edge or point, or when hurled through the air with great velocity, there resides immediate peril to the human vision. This is pronounced in the use of metal tools of whatever character or fashion. With the hazard from tools is to be embraced the hazard from machinery of various kinds. Extensive danger, and perhaps harm of lasting character, lies in the flying up of particles, broken or chipped from tools or materials. Not unlike injury may be occasioned by other substances striking or entering the eye forcibly from outside—stone, wood, leather, etc. Explosive matter constitutes in itself a source of extreme danger. In the handling of objects, as well as in the fall of the person, there is possible contact with some object which may cause hurt to the eye. In fact, the eye seems to be a particularly vulnerable part of the body for injuries acting upon it externally, including not only various substances projected toward it, but also substances in a heated state or of a virulent nature.

Upon the eye subversive effects are on the whole most in evidence in the case of cutting or piercing instruments or materials. Here there is actual penetration to a greater or less depth of the organ of vision, itself of most serious consequence, often with effects instantaneous and complete, and possibly proving but little amenable to medical or surgical treatment. Next most damaging to the organ of vision is injury through burning or scalding, including the action of chemicals or of electricity—a casualty quite likely to involve both eyes. In this case, generally the result of contact with a hot or mordant substance, there is definite destructive action in some part of the ocular area. Should inflammation be set up in consequence of some injury to the eye, or should infection be induced, the effects may be of aggravated character. With foreign substances in the eye, such is the more to be expected.

Whenever the particle or object or substance striking or entering or having contact with the eye is of sufficient force or is of such nature as to have actual ingress of some part of it or to break down or lay waste or consume some part, the results are likely to be relatively disastrous. In some instances much may depend upon the timeliness or the efficacy of the treatment administered. If the injury to the eye is serious at all, the effects may often be expected to be of lasting character.

GENERAL EXTENT OF INJURIES TO EYE

We may attempt, finally, to discover the extent of injuries to the eye in relation to injuries in general, or to injuries of all kinds, or the proportion which the one constitutes of the other. In the following table is given, according to the latest available statistics with respect to industrial workers in certain States of the United States, the percentage of accidents to the eye among all accidents, of loss of eye among all accidents, of loss of eye among all cases of permanent partial disability, and of loss of eye among all eye accidents.¹

PERCENTAGE OF ACCIDENTS TO EYE IN DIFFERENT STATES

<i>State</i>	<i>Per Cent of Accidents to Eye among All Accidents</i>	<i>Per Cent of Loss of Eye among All Accidents</i>	<i>Per Cent of Loss of Eye among All Permanent Par- tial Disabilities</i>	<i>Per Cent of Loss of Eye among All Eye Accidents</i>
Arizona.....	6.8	...	....	....
California.....	6.0	2.2	13.6	1.8
Idaho.....	8.3	...	....	....
Illinois.....	4.2	0.3	....	10.1
Indiana.....	8.1	...	....	....
Kentucky.....	9.2	...	....	....
Maryland.....	5.8	0.1	8.1	1.1
Massachusetts.....	6.8	0.2	7.9	3.0
Michigan.....	....	0.5	5.3	....
Minnesota.....	3.4	1.4	14.9	....
Missouri.....	2.7	...	6.9	....
Montana.....	5.6	0.2	12.0	4.1
Nevada.....	5.4	0.5	18.1	9.1
New Jersey.....	....	...	1.9	....
New York.....	2.6	0.1	16.4	1.3
Ohio.....	19.5	0.3	15.5	3.0
Oklahoma.....	13.1	0.2	....	1.4
Pennsylvania.....	6.5	0.3	13.7	6.1
Tennessee.....	5.5	...	....	....
Vermont.....	1.5	...	....	....
Washington.....	4.3	0.8	7.0	17.6
West Virginia.....	....	0.5	25.0	....
Wisconsin.....	....	0.3	6.9	....
United States.....	6.2	0.2	....	4.5

On the average among the different States,² the proportion of

¹ Statistics are taken from reports of industrial accident boards, industrial commissions, departments of labor, etc. See also Bulletin of United States Bureau of Labor Statistics, no. 425, 1927; *Monthly Labor Review*, *passim*.

² Differences between the proportions for the several States are largely due to diversified methods of the reporting of accidents. In part they are ascribable to more extensive efforts in some States than in others to set down all injuries occurring, but in greater part to different conceptions of what are to be regarded as "accidents," much depending upon the length of the absence from work entailed, whether of one or more days, or of one or more weeks. Hence conditions in some States in which many eye injuries are reported are not to be taken as in reality worse than conditions in States in which fewer are reported. The loss or serious impairment of vision of the eye, however, is of a definite nature, and is usually recognizable without difficulty.

eye injuries to all injuries is about one in sixteen (6.3 per cent).¹ Similarly the proportion of all injuries resulting in the loss or serious impairment of sight in an eye is about one in two hundred (0.5 per cent). Approximately one-ninth (11.4 per cent) of all permanently disabling accidents involve the eye. Of accidents to the eye one in twenty (4.8 per cent) results in its loss or permanent impairment.²

According to reports from different States, from two-thirds to nine-tenths (perhaps even more) of injuries to the eye are of temporary character; from less than one-tenth to less than one-third involve permanent partial disability; and from 0.1 per cent to 3.0 per cent (more often less than 1.0 per cent) involve permanent total disability.³ In some States about one-tenth of all accidents to the eye involve both eyes.

For temporary injuries to the eye the loss of time entailed from work is on the average about three and one-half weeks. (For temporary injuries in general it is about five and one-half weeks.) The period with respect to the eye is as a rule the shortest of all with the exception of that with respect to hands and fingers. For injuries to the eye involving permanent partial disability the number of weeks lost appears on the whole to be about one hundred—a period which is about double that for all accidents together. In total permanent disability involving the eye there is generally what we know as full blindness.

The entire number of injuries to the eye occurring annually in industry in the United States may not be known. But if we take as a basis the figures of the States showing the most liberal reporting of accidents, we have hardly less than 500,000 accidents to the eye of all kinds occurring in industry in the United States each year. If we take as a basis States reporting on a less extensive or on a stricter scale, in which are included only such accidents as involve interruption of work or medical attendance, we have somewhat over 50,000 as the total number in the country. If, again, we assume, as is sometimes done, that there are 700,000 non-fatal accidents of more than four

¹ Extreme percentages in certain States are disregarded.

² Of all cases of permanent total disability among those undergoing industrial rehabilitation (1924), the proportion with defective vision in both eyes is 3.7 per cent. Of those under training, 8.4 per cent are blind. The proportion (1928) with total or partial loss of sight is 2.4 per cent. See *Monthly Labor Review*, xix., 1924, 6, Nov., p. 1199; *Labor and Industry* (Pennsylvania), xi., 1924, Sept.; publications of Federal Board for Vocational Education.

³ When loss or serious impairment of vision is involved, the extent of loss, or the proportion of vision reported to be destroyed, varies widely among different States. See Bulletin of United States Bureau of Labor Statistics, no. 216, 1917, p. 55; *Monthly Labor Review*, *passim*; Bulletin of New York State Department of Labor, Sept., 1927, p. 339. See also reports of different States.

weeks' duration in the United States annually, or that there are 700,000 compensable accidents annually, the number of accidents to the eye, constituting 6.3 per cent of all, amounts to some 44,000.¹ Much the larger portion of all these ocular injuries are without serious consequences.

Next, we may seek to discover the total number of accidents which involve the loss or serious impairment of the sight in one eye. On the basis of the number in the States making report in the matter we may believe that there are not less than 3200 such injuries occurring annually among industrial workers in the United States.

Lastly, we may make inquiry as to the number of cases of actual or practical blindness in both eyes (total permanent disability.) From an examination, over a period of years, of accident or other statistics of the States, it appears that this varies in different ones from none at all to nine or ten a year (occasionally twenty), in most rarely exceeding two or three.² The heaviest proportions seem to be found in distinctly mining States—indicating once more the particular hazard to the sight in that occupation. All told, there are probably somewhat over one hundred cases of total blindness occurring annually in industry in the United States.

POSSIBLE MEASURES FOR PREVENTION OF ACCIDENTS AND INJURIES TO EYE

How much of the blindness resulting from accidents and injuries is preventable, we do not fully know; but that a very considerable part is so we need not doubt. For that portion which is due to thoughtlessness or recklessness on the part of the victim or his associates—including general negligence or the willingness to take chances on the part of workmen in their tasks—the remedy lies chiefly in the inculcation of lessons of heed and caution, with extensive educational campaigns as to the care of the eye, and as to its use and its misuse. For that portion to be set down to conditions for which the individual is not directly responsible, it is incumbent upon society at large to take whatever protective measures may be necessary.³

The procedure to be adopted to insure the safety of the sight is rarely of an onerous nature, being little more than simple provision

¹ The number of injuries in industry in the United States is variously estimated at from 500,000 to 2,000,000, or even more.

² The average per year in Wisconsin (1916 to 1927) is 18; in Pennsylvania (1916-1930), 18; in New York (1925-1930), 10; and in Ohio (1926-1930), 6.

³ On qualifications of physicians with respect to eye accidents, see *Pridgen v. Gibson*, 194 N. C., 289, 139 S. E., 443, 54 A. L. R., 855 (1927); *Castner v. Sliker*, 33 N. J. L., 95 (1868); *Crawford v. American Stores Co.*, 103 N. J. L., 320, 136 Atl., 715 (1927); *Volmas Drug Co. v. Smoots*, 269 Fed., 356 (1920); *Atchison, T. & S. F. R. Co. v. Click* (Tex. Civ. App.), 288 S. W., 992 (1926).

for its well-being and protection.¹ In industrial establishments certain special devices should be installed for the protection of the sight. In operations producing dusts or other fine abrasive and irritating particles, as with emery wheels, grindstones, metal working machinery, and the like, hoods or other screens or shields should be provided; while to carry off such matter, there should be installed suitable exhaust systems, including blowers, fans, ventilators, forced draft pipes, suction pipes, etc.² In such processes, and in those involving the chipping or driving of metal, the hewing of minerals, and the handling of molten metal, goggles should be required to be worn.³ These should be of tough glass, with side screens of wire, leather, rubber, or other substance, to afford protection from all directions, and with removable lenses for replacement when shattered. In certain of these operations, and in spraying and similar operations, in which fine particles may be hurled or blown about, there should be used helmets of steel or cloth, with a glass and wire screen opening for the eyes, or face masks of fine wire netting. In some such operations, furthermore, there should be installed proper exhaust systems.⁴ In operations involving chipping on an extensive scale, especially in steel mills, there should, for the protection of the sight of workers in general and of other persons, be set up screens of canvas, burlap, wire, or other substance.⁵ To guard against flying glass and steam from the breaking of water or lubricator gauges, there should be affixed substantial guards of metal or heavy glass, to be pushed aside when necessary, while the gauges should themselves be of strong glass. All hammers and other tools, furthermore, should be periodically examined, and those found to be "burred" or otherwise defective should be repaired or discarded. For machinery or appliances involving the use of gearing, belts, lacing, hooks, or other parts liable to cause damage to the eye, protection should be afforded in the introduction of general safety measures. The same is true with respect to the use of explosives.

In the presence of great heat or of intense light, including in some cases a highly shining surface, suitably colored glasses should be worn;

¹ There should be strict regulation, possibly prohibition, of the manufacture and sale of toy weapons of various kinds, as well as limitations upon the use of fireworks.

² Emery wheels or other fast revolving wheels should also be provided with powerful steel hoods to guard against the possible breaking of a wheel. For some of them, especially grindstones, a system of flanges is needed.

³ Individual goggles, which may be repaired or cleaned, are the better. Paper eyecups may be attached.

⁴ In sand-blasting operations with small articles, a special sand-box chamber into which only the arm is thrust may be employed.

⁵ In some operations wire-glass shields, plate glass shields, wire meshes, or special chip deflectors are necessary. At times a further aid is a screen-like guard attached to a glove.

and sometimes helmets of fibre or equivalent material, or face shields, with an opening in front for lenses, should be employed.¹ In work with chemicals, drugs, or other substances of harmful effect upon the eyes, full ventilation must at all times be assured, with suitable exhaust or draft systems; while hoods or other guards are to be employed where necessary. Containers and carriers are to be properly handled. Here also the employment of goggles is to be insisted upon, fitted with rubber or leather sides. In some processes helmets are to be worn. About the use of wood alcohol are to be placed additional regulations. When sold it should be duly labeled, with the word "poison" in clear and unmistakable type, while all trade names which are likely to confuse it with grain alcohol should be forbidden. Perhaps as an adulterant it should be prohibited altogether, except where absolutely necessary, which also might be the fate of the entire deodorized article.²

Finally, all industrial establishments should be provided with first aid equipment for eye injuries, both for the removal of foreign bodies and for the treatment of cases requiring it.

PRESENT EXTENT OF MEASURES FOR PROTECTION OF SIGHT FROM ACCIDENTS

Systematic efforts for the protection of the sight from accidents are a part of the general movement in America for the prevention of blindness, to be later considered. In the initiation of positive measures, a beginning has been made in the voluntary installation of safeguards on the part of certain industrial concerns.³ Much, however, in the way of protection of the sight is left undone.⁴

The concern of the state as expressed in legislation for the protection of the sight may be said to be manifested chiefly in legislation

¹ For excessive heat or glare, chain screen doors are to be recommended. Electric flashes may be guarded against by enclosed switches or fuse boxes.

² Injury from wood alcohol should also be made reportable, so as to make it possible to discover the source of its sale or distribution. At the same time the use of the "denatured" grain alcohol, if not made dangerous by the admixture of wood alcohol (which should not be over a few per cent), should be encouraged, which is as inexpensive, is non-poisonous, and can answer as well for practically all industrial purposes.

³ Notable work has been done by certain large steel corporations. See publications of National Society for Prevention of Blindness; Proceedings, 1928, p. 5; American Encyclopedia and Dictionary of Ophthalmology, 1916, ii., p. 1161; American Museum of Safety, Bulletin, Dec., 1917; Bulletin of United States Bureau of Labor Statistics, no. 234, 1918, p. 264; D. S. Beyer, "Industrial Accident Prevention," 1916, p. 373; W. C. Posey, "Hygiene of Eye," 1918, p. 253; *Journal of American Medical Association*, lii., 1909, p. 876; lx., 1913, p. 2003; *Ophthalmology*, xiii., 1916, p. 61; *Pennsylvania Medical Journal*, xv., 1912, p. 366; *Survey*, xxv., 1911, p. 848; *News Letter*, June, 1930; *Monthly Labor Review*, xxiii., 1926, 6, Dec., p. 50.

⁴ In not a few industrial establishments where goggles could be advantageously worn, comparatively little use is made of them.

requiring safeguards for industrial workers, in which are included safeguards for the eye, besides legislation with regard to the use of wood alcohol.¹

As to wood alcohol, reference is for the most part to its labeling, to its possession for sale, and to its employment as an adulterant.² In some cases there is express mention of the possibility of the causation of blindness from its use. In certain States the sale of wood alcohol is more or less carefully prescribed under pure food laws. Regulations in the matter have also been imposed by boards of health, State and local. Though the enforcement of the laws with regard to wood alcohol has been far from general, a more pronounced tendency in this direction is now in evidence in some quarters.³

Laws designedly or incidentally of benefit in the preservation of the sight of workers in industrial pursuits are part of the so-called factory or labor legislation now being quite generally enacted in the United States. As statutes of this character became broader and more comprehensive, we may expect increased attention to the dangers to the eye, with consequent increased provision for its safety. This legislation may take the form of special enactments intended to protect the sight, or, what is more likely, may be included in more or less general regulations, relating to the sight but indirectly. Legislation expressly designed for the protection of the eye or referring directly to the dangers to it from accidents or diseases of occupation, with the requirement of the introduction of protective devices if found necessary, have seldom received enactment. In Massachusetts investigation may be undertaken as to possible hazards to the eye,

¹ In most of the States the intentional destruction of sight in one or both eyes, as well as injury to other parts of the body, is by statute expressly declared to be felonious (though it could well be included in the old law as to mayhem). The punishment varies from imprisonment for a few years to life, much depending on the degree of the injury. See penal codes of different States. See also *State v. Nerzinger*, 220 Mo., 36, 119 S. W., 379 (1909) (imprisonment for twenty years for malicious throwing of sulphuric acid into eyes); *State v. Ma Foo*, 110 Mo., 7, 19 S. W., 222, 33 Am. St. Rep., 414 (1892) (both eyes put out from throwing in of starch); *State v. Wilson*, 188 N. C., 781, 125 S. E., 612 (1924) (eye not to be regarded as "limb" or "member"); *People v. Alexander*, 56 Cal. App., 437, 205 Pac., 876 (1922); *Clarke v. State*, 23 Wis., 261 (1852); *Terrell v. State*, 86 Tenn., 523, 8 S. W., 212, 8 Am. Crim. Rep., 532 (1888); *Respublica v. Langcake*, 1 Yeates (Pa.), 414 (1795); *State v. Simmons*, 3 Ala., 497 (1843); *State v. Fisher*, 103 Ind., 530, 3 N. E., 379 (1885); *United States v. Gunther*, 5 Dak., 234, 38 N. W., 79 (1887); *Payne v. State*, 21 Okla. Crim. Rep., 416, 209 Pac., 334 (1922); *People v. Jankowski*, 327 Ill., 68, 158 N. E., 362 (1927); *Chick v. State*, 26 Tenn., 161 (1846); *State v. Bloedow*, 45 Wis., 279, 2 Am. Crim. Rep., 631 (1878); *State v. Hair*, 37 Minn., 351, 34 N. W., 893, 7 Am. Crim. Rep., 369 (1887); *State v. Holmes*, 20 Del., 196, 55 Atl., 343 (1903); *Dahlberg v. People*, 225 Ill., 485, 80 N. E., 310 (1907). See, in addition, A. L. R., 16, 963; 58, 1321. A contract for the sale of whiskey containing wood alcohol, from which blindness results, may be void. *Harkins v. Provenzo*, 189 N. Y. Supp., 258, 116 Misc., 61 (1921).

² See *Ophthalmology*, xii., 1916, p. 618; publications of National Society for Prevention of Blindness.

³ See *ibid.*, p. 24.

as to which employers are to be duly instructed, and proper safeguards to be installed.¹

In the statutes in general of the American Commonwealths there are several different provisions which, while not specifically mentioning the dangers to the eye, may be of greater or less avail in the protection of the sight. In nearly all there are more or less extensive requirements as to the employment of safeguards in industry. In some these apply to various general arrangements; and in some, to the use of particular machinery or material. In certain States industrial boards or similar bodies are given discretionary powers in the directing of safe appliances and surroundings. In a considerable number there is public inspection of factories, mines, and other places of work, in part for the purpose of removing whatever may involve especial risk.

In many States laws have been enacted with regard to injurious dusts arising in the course of labor, especially such as come from minerals or metals (chiefly meant to guard against respiratory disorders). Reference is mainly to machinery and appliances for grinding, polishing, or similar purposes, which are sometimes declared to be dangerous; and it is usually provided that there be hoods, fans, blowers, ventilators, suction pipes, or other devices, to catch the dust or filaments, and to prevent them from injuring the workers. Though primarily intended as a defense against the inhalation of noxious matter, the devices may prove of very real protection to the sight, the particles often being of such size and character as seriously to damage the eye. In a number of States also there are regulations with regard to blasting operations, the manufacture of explosives or dangerous chemicals, and similar processes carrying hazard. (In a few States there is direct mention of the eye.)

In some of the States there are, unfortunately, no exact specified requirements, the regulations being apparently left to the discretion of the inspection officials—safety appliances being provided “as far as practicable,” “as far as the nature of the business permits,” etc. In a few the character of the apparatus to be installed is more or less carefully defined.

In connection with the general requirement of the reporting of accidents, there may be insured more prompt and more skilled treatment for victims of eye accidents. Similarly, in connection with workingmen's compensation laws, wherein provision is made for the payment of certain sums for the loss of sight, either expressly so designated or included under “disability,” there is afforded a very strong

¹ Laws, 1911, ch. 603; 1919, ch. 350; Rev. Stat., 1932, p. 1889.

incentive for the installation of proper safeguards for the protection of the eye.¹ Finally, in various regulations of State or local boards of health, or of other boards, greater or less aid is extended in this direction.

Laws that might have a bearing upon the protection of sight in industry are better enforced in some States than in others. In most there is no small room for improvement.²

¹ The matter of workmen's compensation laws is considered in Chapter LII.

² Laws or ordinances with respect to the use of toy weapons and firearms have been enacted in a number of communities, but their enforcement is as yet of limited extent.

NOTE TO CHAPTER IV. On dangers to the eye in industry, and on measures for its protection, see Louis Resnick and L. H. Carris, "Eye Hazards in Industrial Occupations," 1924; National Society for Prevention of Blindness, "Eyes Saved in Industry," 1929; Safety Institute of America, "Safety Fundamentals," 1920, p. 61; M. J. Rosenau, "Preventive Medicine and Hygiene," 1927, p. 451; L. A. de Blois, "Industrial Safety Organization," 1926; H. V. Würdeman, "Injuries of Eye," 1932; W. M. Beaumont, "Injuries to Eyes of Employed," 1907; C. M. Hansen, "Universal Safety Standards," 1914; G. M. Price, "Modern Factory," 1914; W. H. Tolman, "Safety," 1913, pp. 78, 81, 86, 180; G. A. Cowee, "Practical Safety Methods and Devices," 1916, pp. 357, 407; M. W. Alexander, "Safety in Foundry," 1915; David Van Schaak, "Safeguards for Prevention of Industrial Accidents," 1913; S. W. Ashe, "Organization in Accident Prevention," 1917, pp. 47, 102; George Bradshaw, "Safety First," 1913, p. 119; D. S. Beyer, "Industrial Accident Prevention," 1916; J. R. Commons and J. B. Andrews, "Principles of Labor Legislation," 1916, pp. 328, 331; G. M. Kober and W. C. Hanson, "Diseases of Occupation and Vocational Hygiene," 1916, p. 307; W. G. Thompson, "Occupational Diseases," 1914; Thomas Oliver, "Dangerous Trades," 1902, p. 761; Thomas Oliver, "Diseases of Occupation," 1908, pp. 353, 379; E. R. Hayhurst, "Industrial Health Hazards in Ohio," 1915; B. F. Goodrich Co., "Importance of Eyesight and Its Conservation," 1915; H. N. Barnett, "Accidental Injuries to Eye," 1911, p. 200; A. M. Ramsay, "Eye Injuries and Their Treatment," 1907; E. B. Fowler, "Waste in Industry," 1921, p. 374; R. A. Witthaus and S. C. Becker, "Medical Jurisprudence," 1896, iv., p. 5; E. W. Hope, "Industrial Hygiene and Medicine," 1923, p. 415; Frank Allport, "Industrial Eye Accidents," 1924; Arnold Lawson, "Diseases and Injuries to Eye," 1913; Arnold Lawson, "War Blindness at St. Dunstan's," 1922; G. M. Kober and E. R. Hayhurst, "Industrial Health," 1924, pp. 655, 883; W. J. Greer, "Industrial Diseases and Accidents," 1909, p. 277; Proceedings of American Academy of Arts and Sciences, 1916, p. 627; Transactions of Pacific Coast Oto-Ophthalmological Society, 1916, p. 26; Transactions of Illuminating Engineering Society, 1914, pp. 307, 472; Proceedings of Section on Ophthalmology of British Medical Association, 1899 (Simeon Snell, "Prevention of Accidents Occurring in Industry"); Proceedings of Section on Ophthalmology of American Medical Association, 1922, p. 88; Proceedings of American Academy of Ophthalmology and Oto-Laryngology, 1915, p. 237; 1919, p. 129; 1921, pp. 34, 41; Proceedings of American Association of Industrial Physicians and Surgeons, 1919, p. 96; Proceedings of Pennsylvania's Safety Congress, 1928, p. 76; Proceedings of Industrial Safety Congress of New York, 1918, p. 69; Proceedings of All Ohio Safety Congress, 1930, p. 245; Proceedings of National Safety Council, 1915, pp. 608, 690; 1916, p. 1299; 1920, p. 513; 1921, p. 55; 1922, pp. 102, 165, 959; 1923, p. 193; 1924, pp. 174, 560; 1925, p. 212; 1926 (ii.), pp. 237, 966; 1927 (ii.), p. 170; 1929 (i.), pp. 240, 422; (ii.), p. 612; 1930 (i.), p. 366; 1931 (ii.), pp. 131, 137, 302; Proceedings of National Society for Prevention of Blindness, 1927, pp. 50, 81; 1928, pp. 3, 5, 17, 36, 43, 44, 51; 1929, pp. 54, 63, 67; National Society for Prevention of Blindness, publications no. 12, 1917, "Eye Hazards in Industrial Occupations" (G. L. Berry); National Industrial Conference Board, Special Report no. 22, 1922, p. 66; Research Report no. 61, 1923, p. 205; Ministry of Health, Report of Departmental Committee on Causes of Blindness and Prevention, 1922 (England); Eyesight Conservation Council, Bulletin no. 1, 1922, "Conservation of Sight in Industry"; United States Bureau of Standards, Handbook series no. 2, "National Safety Codes for Protection of Eyes and Heads of Industrial Workers," 1920; American Encyclopedia and Dictionary of Ophthalmology, 1916, viii., p. 6200;

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CHAPTER V

IMPAIRED VISION SHORT OF BLINDNESS

EXTENT OF IMPAIRED VISION

In connection with the question of the causation of blindness, and with measures for its prevention, there is necessary certain attention to the matter of impaired vision and its possible treatment.¹ In the population in general there is a large, but as yet not fully known, proportion with greater or less defective vision, including a considerable proportion with seriously defective vision.²

In not a few buildings in which people live or congregate, or in which they are occupied for business or for other purposes, the lighting facilities may be inadequate or improperly arranged. In factories and workshops lighting conditions are to be found which many are detrimental to the eyesight.³ In school buildings no small number of pupils are called upon to do their work in constant peril to their eyes.⁴ A frequent result from these conditions is near-sightedness, which may be of progressive character, apart from the possible accentuation or aggravation of any already existing eye trouble.⁵

MEASURES FOR PREVENTION OR RELIEF OF IMPAIRED VISION

Measures applying to the prevention of blindness apply likewise in large part to the prevention of impaired vision. In particular in all places where the eyes are used there should be adequate and properly directed and properly diffused lighting. In buildings, whether used for residence, for business, for industry, or for other purpose, and especially in school buildings, full attention should be given to the entry of natural light, and to the kind and the degree of artificial illumina-

¹ The matter of strained eyes as a factor in the causation of blindness has already received consideration.

² Of the rejections in the first draft for the army of the United States in the World War in 1917, 21.7 per cent were due to eye trouble. *Survey*, xl., 1918, p. 90; *News Letter*, Feb., 1918.

³ In certain fine work with the eyes, as in watch-making and other processes, or in prolonged work with very light-colored goods, there is added strain imposed upon the eyesight.

⁴ Estimates of children in the public schools with more or less defective eyesight vary from 4 per cent to 30 per cent, but for the most part from 10 per cent to 20 per cent.

⁵ In some schools books may be used which are poorly printed, or wall blackboards may be at too great a distance or otherwise unfavorably placed.

tion, both involving the adoption of correct shading, reflecting, diffusing, and similar arrangements.¹ In school buildings it must also be seen that there are supplied suitably printed books, that blackboards are rightly placed, and that shiny surfaces are eliminated as far as possible. The eyes of school children, furthermore, should be periodically examined, with the proper treatment of cases of imperfect vision. The last named matter is one, indeed, that should apply to all children, and to adult persons as well.² In all situations where the eye is exposed to wind or dust, or to other danger, goggles should be worn.

Legislation with respect to the proper lighting of workshops and factories is found in a number of States, though in a few of them the application is only to particular industries. The main concern is often apparently in the effect on the article manufactured. In most cases it is required that places of work be "well lighted," "well and sufficiently lighted," or "reasonably well lighted," the matter usually being made a task of the State factory inspector, along with his general duties in respect to sanitation and ventilation. Now and then the eye is directly mentioned. In a few States industrial commissions, departments of labor, etc. are empowered to specify the amount of window space in relation to surface space.

In a number of States it is required that examination be made of the sight (and usually of the hearing as well) of school children. This may be conducted by the teacher or by the regular medical inspector, tests often being provided by the State department of education or of health. By many local school authorities similar regulations have been adopted. In some cases special treatment or the furnishing of glasses is allowed. In certain States and cities, also, the proper lighting of school buildings is directed.

How far all such legislation has proved of value, we have little means of knowing. Probably much yet remains to be done.

SIGHT-SAVING CLASSES IN PUBLIC SCHOOLS

Special means for the conservation of vision in children in the public schools, introduced within recent years, and in line with modern educational theory and practice in providing special facilities and special pedagogical attention for handicapped children, consists in

¹ Without entering into specifications, it may be said here that the main essential is the securing of ample and steady light; that this should come from back of one, and that there should be no glare in the eyes; that light-colored walls, which absorb less light than do others, are to be preferred; and that in reading, unglazed paper is desirable.

² In certain industrial establishments provision is made for the examination of the eyes of employees.

what are known as "sight-saving classes." Their purpose is to improve low or seriously impaired vision, to check progressive eye troubles, and to keep what sight is had from getting worse—all without subjecting the eye to further strain or further detriment. Children especially affected are those suffering from refractive troubles causing eyestrain or interfering with vision, particularly myopia, hypermetropia, amertropia, and astigmatism, or from certain diseases of the eye affecting vision, including corneal scars, corneal opacities, choroiditis, congenital cataract (and perhaps inactive or subsiding cases of interstitial or phlyctenular keratitis, trachoma, etc.). The amount of vision of such children is regarded as from 20/70 to 20/200. The proportion of children in the schools suffering from visual handicaps to such an extent as to necessitate special classroom treatment may vary for different communities, but for the country as a whole it is believed to be about 0.2 per cent of the public school population.¹

Special provision for sight-saving classes in the United States was first made in Boston and Cleveland in 1913.² Since then the movement has spread fairly rapidly in certain parts of the country. The greatest advance has been made in the larger cities, and in those States where direct State assistance is afforded.³ In 1932 there were somewhat over 400 special classes—found in over 100 cities, and in practically half of the States. The movement has to a large extent been promoted and sponsored by special organized efforts designed for the prevention of blindness.⁴

In sight-saving classes use is made of whatever limited vision is left, but under conditions most favorable to the eye. This organ is employed in but restricted degree, with the best possible lighting arrangements (and with adjustable seats and desks), and with the use of very large type.⁵ Resort is made to oral instruction to a large extent. So far as is feasible, recitation work is carried on in regular classes after preparation under a special teacher.⁶ Most sight-saving classes

¹ See publications of National Society for Prevention of Blindness.

² The movement may be said to have had its inception in England in 1908.

³ In the provisions of most of the laws for day schools for blind children reference is made to children whose sight is so defective as to prevent their education at regular schools. In some States provision is made only for the latter.

⁴ Sight-saving classes are a major activity of the National Society for the Prevention of Blindness.

⁵ The type is most often 24-point. Use is made of soft pencil. As soon as possible the typewriter is availed of for writing.

⁶ Special training for sight-saving teachers has been provided in certain of the institutions of higher education or teacher-training institutions of the country, in considerable measure under the auspices of or with the coöperation of the National Society for the Prevention of Blindness. By this organization is published "The Sight Saving Exchange," a bi-monthly, for the benefit of teachers.

are in the elementary grades, with some in junior high schools, and a few in senior.¹

¹ Aim is made to improve physical health as far as possible. In some cases some form of regular ophthalmic service is provided. Vocational guidance may be afforded in some degree. In certain schools supervising teachers are employed.

NOTE TO CHAPTER V.—On the extent of impaired vision in the United States, especially among school children, on the dangers to the eye from motion pictures, on proper measures of lighting, on the work of sight-saving classes, and on like matters, see references compiled by the National Society for the Prevention of Blindness.

CHAPTER VI

MOVEMENT OF BLINDNESS

PROPORTIONS OF BLIND IN GENERAL POPULATION AT DIFFERENT YEARS

The next matter for inquiry with respect to the possibilities of the prevention of blindness is as to whether it is increasing, decreasing, or remaining stationary in relation to the general population. To determine this, we may have initial recourse to the number of the blind in the United States as compared with the number of the general population at different years. In the following table, based upon the census returns from the year 1830, when the first census of the blind was made, to the year 1930, is shown the number of the blind found in each, together with their number per 1,000,000 of the general population.¹

NUMBER AND RATIO OF BLIND AT DIFFERENT YEARS

<i>Year</i>	<i>Number</i>	<i>Ratio per 1,000,000 of General Population</i>
1830.....	5,444	423
1840.....	6,936	406
1850.....	9,794	422
1860.....	12,658	403
1870.....	20,320	527
1880.....	48,928	976
1890.....	50,568	808
1900.....	64,763	852
1910.....	57,272	623
1920.....	52,567	497
1930.....	63,489	517

From 1830 to 1860 the number of the blind remains fairly stationary with relation to the general population. From 1860 to 1870 it shows a very great increase; and an even greater one from 1870 to 1880. In 1890 there appears a certain decrease, but a small increase

¹ Statistics in this chapter are, unless otherwise indicated, taken from reports of the United States Census Bureau. See "The Blind and Deaf-Mutes in the United States: 1930," 1931; "The Blind in the United States: 1920," 1923; "The Blind Population of the United States: 1920," 1927; "The Blind in the United States: 1910," 1917; "The Blind Population of the United States: 1910," 1916; "The Blind and the Deaf: 1900," 1906; Report on the Insane, Feeble-minded, Deaf and Dumb, and Blind, 1890, 1895; Report on Defective, Dependent, and Delinquent Classes of the Population, 1880, 1888.

again in 1900. In 1910 there is found a very considerable decrease, with also an absolute decrease in the number of the blind over the preceding 10-year period. In 1920 a similar decrease is registered both as to total number and as to ratio. In 1930, on the other hand, there is recorded a certain increase as to both.

The results here, however, we are not permitted to accept at their face value. They are to be offered as the only statistics which we have in the matter, and with the proper pointing out of their shortcomings. Comparisons of one census with another are difficult for several reasons. The censuses have often been taken on somewhat different bases; and there have not always been the same conceptions as to who were to be embraced among the "blind." Moreover, it is possible that certain censuses have proved of a more thorough-going character than have others, with the consequent inclusion of a larger number of the blind in some than in others. It is not likely, for one thing, that blindness has at all increased from 1860 to 1900 at the rate indicated in the table. At the same time it is very doubtful if there has been such a marked falling off from 1900 to 1920 as is denoted, or any increase at all from 1920 to 1930.¹

Though the census returns are not of sufficient reliability to indicate the exact number and ratio of the blind at different years, nor to indicate definitely how far blindness is increasing or decreasing within a given period, they nevertheless throw material light on the problem, and without doubt reflect in greater or less degree actual changes in the prevalence of blindness in the United States. Figures up to 1860 may be regarded as somewhat incomplete, but they are of comparable character, and probably represent something like a constant ratio of the blind in respect to general population for these earlier years. The considerable increase in the ratio from 1860 to 1880, while perhaps in part due to better and more thorough methods of enumeration, is also very likely in part due to a positive augmentation of the blind

¹ In the general population schedules of the census enumerators there was placed in 1850, instead of a mere line, a special column in which was to be recorded the possible existence of blindness in individual cases. In 1870 instead of the question of blindness being left to the judgment of the enumerators, instructions were issued that the inquiry was limited to "total blindness" only. In 1880 special supplementary schedules were sent out, together with additional correspondence; and persons were to be included who, if not "totally blind," were without sufficient sight to be able to read, or were without ability to distinguish form or color. In 1890 the test of blindness was inability to count the fingers at the distance of one foot, there being no further correspondence. In 1900 special blanks with separate schedules were employed; while the test was inability to read even with glasses. In 1910 resort was again made to special columns of the regular population schedules, with the use also of special schedules. In 1920 procedure was similar, but with the use of separate sheets instead of special columns. In 1930 no special schedules were made use of. (In 1880, 1890, 1910, and 1930 a small payment was made for each case of blindness reported.) See "The Blind in the United States: 1910," 1917, pp. 11, 15; "The Blind Population of the United States: 1920," 1928, p. 7.

population during this period, the latter year quite possibly representing the maximum prevalence of blindness in relation to the population as a whole.¹ The steady decrease in the ratio in ensuing years may in considerable measure be taken as in general keeping with the actual movement of blindness. It is true that there have been within these more recent years two particular influences to bring about a larger number of blind persons. One lies in the ever enlarging proportion of old persons in the general population, among whom blindness is always most likely to fall. The other lies in the rapid industrial development of the country, accompanied with increasing frequency of accidents to the eye.² On the other hand, there are to be recorded distinct factors of opposite direction, and perhaps of more than counteracting effect. These include marked advances in medical science, with larger and fuller knowledge regarding the eye and its troubles, and with wider and improved facilities for its treatment—besides generally improved conditions of living, better and more extensive safety measures, and special campaigns for the prevention of blindness—all operating to cause a perceptible diminution in the incidence of blindness to the general population with the progress of the years.

If blindness has decreased at the same rate since 1900 as it did in the two previous decades³—and there is every reason to believe that it has decreased at least as rapidly—then in the past half century, while the population in general has increased two and a half times, the blind population has increased hardly more than 50 per cent; while its ratio to the population in general has decreased by over two-thirds.

PROPORTIONS ACCORDING TO GEOGRAPHIC DIVISIONS

In the following table is given the percentage distribution of the general population and of the blind population in the several geographic divisions of the United States from 1830 to 1930.⁴

At the earliest years both groups are found heavily concentrated in the eastern sections of the country; but with the passing years there

¹ There may have been a certain slight effect from blindness caused through wounds or disease incident to military service in the Civil War.

² Probably also today there is a wider definition of blindness employed.

³ The years 1880 and 1900 are regarded as of special reliability and comparability. In the event indicated the number of the blind in each census year from 1880 to 1930 would have been 49,000, 56,600, 63,000, 70,300, 74,400, and 79,700, while the respective ratios would have been 976, 899, 829, 764, 704, and 649. When the figures according to original enumeration since 1800, especially for the years 1900 and 1910, are properly adjusted, with due consideration of all factors, they bear a considerable resemblance to the figures based upon the rate of decrease from 1880 to 1900. The estimated ratios since 1880 express the situation with reference to a constant base of decrease; they afford no indication of a possible acceleration of decrease, especially of later years.

⁴ In Table X in Appendix A is given the ratio of the blind per 1,000,000 of general population in the several geographic divisions from 1880 to 1930.

PERCENTAGE DISTRIBUTION OF BLIND BY GEOGRAPHIC DIVISIONS AT
DIFFERENT YEARS

Geographic Division	PER CENT DISTRIBUTION										
	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930
United States:											
Total population.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Blind population.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New England:											
Total population.....	15.2	13.1	11.8	10.0	9.0	8.0	7.5	7.4	7.1	7.0	6.5
Blind population.....	14.7	14.4	12.1	10.3	9.1	8.9	8.6	7.5	7.1	8.9	6.1
Middle Atlantic:											
Total population.....	27.9	26.5	25.4	23.7	22.9	20.9	20.3	20.3	21.0	21.1	21.3
Blind population.....	26.7	25.3	24.1	25.0	21.1	19.9	18.1	16.9	17.5	17.8	15.7
East North Central:											
Total population.....	11.4	17.1	19.5	22.0	23.7	22.3	21.5	21.0	19.8	20.3	21.0
Blind population.....	6.8	10.0	14.8	18.8	20.8	20.8	22.2	22.6	20.5	23.3	22.3
West North Central:											
Total population.....	1.1	2.5	3.8	6.0	10.0	12.3	14.2	13.6	12.7	11.9	10.8
Blind population.....	0.7	1.9	2.9	5.3	8.0	10.3	12.5	13.5	11.7	11.6	13.7
South Atlantic:											
Total population.....	28.3	23.0	20.2	17.1	15.2	15.1	14.1	13.7	13.3	13.2	12.8
Blind population.....	37.2	31.7	25.7	20.3	18.5	17.2	15.6	14.1	14.5	12.7	12.8
East South Central:											
Total population.....	14.1	15.1	14.5	12.8	11.4	11.1	10.3	9.9	9.1	8.4	8.0
Blind population.....	11.7	15.2	15.6	14.3	14.5	13.5	12.2	12.7	12.3	9.4	9.2
West South Central:											
Total population.....	1.9	2.6	4.1	5.6	5.3	6.6	7.3	8.6	9.6	9.7	10.0
Blind population.....	2.3	1.5	3.9	4.1	5.8	6.5	7.2	8.1	9.8	8.1	9.3
Mountain:											
Total population.....	....	....	0.3	0.6	0.8	1.3	1.8	2.2	2.9	3.2	3.0
Blind population.....	....	....	1.0	1.3	1.1	1.4	1.5	2.0	3.1	3.6	3.8
Pacific:											
Total population.....	....	....	0.5	1.4	1.8	2.2	3.0	3.2	4.6	5.3	6.6
Blind population.....	....	....	....	0.6	1.1	1.6	2.1	2.6	3.6	4.5	7.1

sets in a strong movement to the west. The movement of the two groups, however, is parallel only to a limited extent. In the New England and West South Central divisions the two groups proceed at a fairly constant pace. In the Middle Atlantic and South Atlantic the proportion for the blind decreases slightly more rapidly than that for the general population; in other words, in these two divisions there has been an appreciable diminution of blindness in relation to the total population. In the remaining divisions the proportion for the blind appears to increase somewhat the more rapidly.¹

In seeking to account for changes in the ratios of blindness in different sections of the country (apart from possible greater completeness or accuracy of the returns for different ones at different years), it would seem to be most likely that certain of the diseases that induce blindness are being overcome, or their headway is being checked, to a greater extent in some areas than in others. This is doubtless the case in particular with respect to trachoma and ophthalmia neonatorum, against both of which diseases has been waged a notable campaign of later years. In the matter also to be reckoned with are industrial developments, with their effects upon the eyesight, these de-

¹ The ratio of the blind in cities of different sizes shows from 1880 to 1910 little significant change.

velopments being more pronounced in some sections than in others. In some parts of the country better control of health conditions in general is doubtless a very material factor. In some areas an influential factor is the relatively high proportion of old persons, a class upon whom blindness is particularly wont to fall.

The circumstance that blindness seems to show relatively the least decrease in the western parts of the United States may indicate simply that this part of the country, as it becomes more settled, is more and more reaching, through population movements and the increasing age of the population, its normal quota of the blind—or the natural apportionment of the blind population of the country.

The decreases noted for parts of the South might be thought to indicate that a more rapid reduction of blindness is being accomplished there than elsewhere, but it is to be remembered that the ratios for blindness in this section have been very large at times in the past. If, as is later to be brought out, blindness apparently now prevails much less extensively among Negroes,¹ who constitute so large a proportion of the population of the South, this is at least a partial explanation of the general decrease. Possibly also more or less credit must be given to the previously mentioned campaign against trachoma, a disease which has until recently prevailed in certain parts of the South, having in fact some of its strongholds there.

How much in general the present scientific country-wide campaign against blindness is bearing fruit we do not definitely know. The connection between the various local movements in this direction and the reported reduction of blindness is not greatly in evidence as yet. We can hardly doubt, however, that these efforts are on the whole proving of no small effect.

PROPORTIONS ACCORDING TO SEX

In the following table is given the number of blind males and of blind females per 1,000,000 of the general population, and the number of males per 100 females, among the blind and in the general population, from 1850 to 1930.

The ratio of males to females among the blind shows considerable variations during this period, maintaining little correspondence with changes in the sex ratios of the general population. The reasons for this situation are not at once apparent, though the general increase in the number of males since 1880 may be considered as one of the results of the continued industrial growth of the country, a greater number of accidents to the eyes of male workers naturally accom-

¹ See *post*, p. 130.

BLINDNESS AND THE BLIND

RATIO OF MALE TO FEMALE BLIND AT DIFFERENT YEARS

YEAR	NUMBER PER 1,000,000 OF GENERAL POPU- LATION OF SAME SEX		MALES PER 100 FEMALES	MALES PER 100 FEMALES IN GENERAL POPULA- TION
	Male	Female		
1850.....	461	382	125.7	104.3
1860.....	449	354	133.1	104.7
1870.....	582	471	126.4	102.2
1880.....	1048	900	120.6	103.6
1890.....	876	736	124.9	105.0
1900.....	955	745	133.7	104.4
1910.....	685	556	130.7	106.0
1920.....	560	432	134.6	104.0
1930.....	585	408	136.5	102.5

panying such growth. If blindness is in fact decreasing, the decrease would seem to be the more marked in the case of females.

PROPORTIONS ACCORDING TO RACE AND NATIVITY

In the following table is given the percentage distribution of the blind by race and nativity, together with the ratio per 1,000,000 of general population, from 1830 to 1930 (native and foreign-born whites being distinguished only from 1860 to 1920).¹

PERCENTAGE DISTRIBUTION AND RATIO OF BLIND ACCORDING TO RACE AND NATIVITY AT DIFFERENT YEARS

<i>Race and Nativity</i>	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930
PER CENT DISTRIBUTION											
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White.....	73.0	72.5	81.5	84.8	83.5	84.4	85.7	87.3	83.1	87.0	84.1
Native.....	...	...	...	70.8	67.7	67.6	67.6	70.8	65.7	72.0	...
Foreign born.....	...	...	...	14.0	15.8	16.9	18.1	16.5	17.4	15.0	...
Negro.....	17.0	27.5	18.5	15.2	16.3	15.1	14.0	11.8	15.5	12.0	14.7
Indian.....	...	...	...	...	0.1	0.5	0.3	0.9	1.4	0.9	1.1
Other colored.....	...	...	...	...	...	...	...	...	0.1	0.1	0.1
RATIO PER 1,000,000 OF GENERAL POPULATION											
Total.....	423	406	422	403	527	976	808	852	623	497	517
White.....	377	354	408	399	505	951	788	846	582	482	485
Native.....	...	...	...	392	490	897	746	810	550	467	...
Foreign born.....	...	...	...	432	584	1254	1003	1047	745	576	...
Negro.....	631	663	499	433	681	1122	945	866	900	602	767
Indian.....	...	...	...	...	1127	3674	568	2395	3026	1996	2064
Other colored.....	...	...	...	...	...	...	...	...	...	...	...

During this period blindness appears to have decreased most markedly with the Negro race. Whatever the actual extent of the diminution of blindness among Negroes, it is most probably to be ascribed to the increasing availability of medical treatment for eye

¹ Figures for 1920 adjusted to special reports.

troubles among them, with the consequent arrest of incipient blindness. With Indians there seems to have been a relative increase of blindness until the more recent years, a situation with little question indicating larger efforts today to deal with the matter. With the foreign-born whites there is, relatively, first a movement of increase in blindness, and then a movement of decrease. The early increase is doubtless due to their widening entry into industrial operations, with greater liability to accidents to the eye; with later years there has perhaps been sufficient length of time for better adjustment to American ways, with reduced industrial hazards. In addition, the increasingly stringent requirements of present immigration laws have had effect in cutting down the number of potentially blind immigrants.¹

PROPORTIONS ACCORDING TO AGE

In the following table is given the percentage distribution of the blind according to age, together with the ratio per 1,000,000 of the general population, and the median age of each group, from 1830 to 1930.²

For childhood and youth there appears a progressive diminution in the proportions of the blind. This decrease is most notable in the earlier years of life. For those under five years the proportion in 1930 is only one-third of that in 1860. From five to nineteen there is likewise on the whole a decrease, but less appreciable than that for younger years. Under twenty on the whole the proportion has been cut in two since the earliest period. Decreases continue in general to the prime of life, or till about forty. Later years of life show increased proportions, reflecting more or less the decreased proportions for earlier. (The ratios for the several periods indicate similar trends.)

The decrease of blindness in the early years of life is, we may be sure, to a large extent to be ascribed to the present campaign against blindness. This is having notable results from preventive work at birth or shortly after—in particular with respect to that form of blindness known as ophthalmia neonatorum. Headway is also in evidence with regard to the prevention of blindness from other affections of infancy and childhood.

A very influential factor in expanding the proportions of the blind in the later years of life—and in like degree diminishing the proportions in earlier years—consists in changes in the age distribution of the general population. The increasing age of the blind keeps pace to a considerable extent with the increasing age of the general popula-

¹ For percentages of the blind in different geographic divisions by race and nativity classes 1910 and 1920, see "The Blind Population of the United States: 1920," 1928, p. 29.

² Figures for 1930 in part estimated.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO AGE AT DIFFERENT YEARS

	1860	1870	1880	1890	1900	1910	1920	1930
PER CENT DISTRIBUTION								
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5.....	2.5	1.6	1.9	1.5	1.0	1.0	0.7	0.8
Under 1.....	0.3	0.2	0.2	0.2	....	0.1	....	....
1 to 4.....	2.2	1.4	1.7	1.3	....	0.8	0.7	....
5 to 9.....	4.5	3.9	3.7	2.9	2.6	2.2	2.7	1.9
10 to 14.....	6.0	6.5	5.6	4.2	4.5	3.5	4.6	3.0
15 to 19.....	7.0	6.7	5.9	4.5	4.9	3.9	4.7	3.2
20 to 39.....	21.3	21.1	18.9	17.0	15.3	16.3	16.4	14.0
40 to 59.....	22.6	23.1	22.6	24.3	23.3	23.7	23.6	30.0
60 or over.....	36.0	37.1	41.5	45.8	48.5	49.4	47.3	47.1

RATIO PER 1,000,000 OF GENERAL POPULATION OF SAME AGE

Total.....	403	527	976	808	852	623	497	517
Under 5.....	66	58	135	100	70	52	32	44
Under 1.....	43	36	75	64	....	32	9	....
1 to 4.....	72	63	151	109	....	57	37	....
5 to 9.....	137	166	281	188	187	128	123	89
10 to 14.....	204	275	478	294	356	219	225	151
15 to 19.....	264	338	571	338	414	243	257	179
20 to 39.....	276	367	594	426	405	305	249	227
40 to 59.....	681	814	1440	1219	1169	826	602	610
60 or over.....	3370	3896	7178	5866	6414	4542	3100	3660

MEDIAN AGE

Blind population...	47.7	49.0	52.3	56.7	58.9	59.6	58.0	61.6
General population..	19.4	20.1	20.9	21.4	22.9	24.0	25.2	26.2

tion, each group tending to become an older one with the lapse of the years. The general population from year to year contains larger and larger proportions of persons in advanced years. (The proportion over sixty years of age has practically doubled during the period in question.) This circumstance arises from the ever greater longevity of human beings in general, or from the continued lengthening of the life span—people being kept alive longer than was the case in the past. Because of the relative greater number of persons in advanced years, there will presumably be a constantly increasing number upon whom blindness may fall, blindness being especially likely to come in the later years of life; there is thus a natural enlargement of the proportions of the blind among persons in such advanced years. In fact, the increase in the proportions of the blind at such ages proceeds more rapidly than in the proportions of the population as a whole. (This is especially to be observed in the changes in the median ages of the two groups, the blind gaining some fourteen years during the period in question, and the general population seven.) The blind population

of the country thus becomes a distinctly older one, and will become increasingly so with the years, the tendency toward concentration in the later years of life being more and more pronounced.

In addition, there may be definite reasons for an increase of blindness among persons beyond the years of youth, especially among those in early and middle adult life. These lie mainly in the expanding industrial operations of modern times, with the perils to the eye augmented in consequence, there possibly also being denoted to some extent earlier ages of entry into industry.

It is at the same time to be remembered that the forces being put into operation for the arrest of blindness, especially through advancing medical skill, are not at rest with respect to the older years of life, even though perhaps of less effect than with respect to the younger.¹

PROPORTIONS ACCORDING TO AGE AT OCCURRENCE OF BLINDNESS

In the following table is given the percentage distribution of the blind according to age at occurrence of blindness in the years 1880, 1910, and 1920.

On the whole during this period the proportions for the three broad groups according to age of occurrence of blindness show no great changes.² The matter is more or less affected by certain alterations in the age distribution of the general population, within this time involving in particular a certain decrease in the proportion of children and a certain increase in the proportion of old persons.³

¹ Additional light is thrown upon the matter of the increase or decrease of blindness at the several ages, as affected by the constantly enlarging proportion of old people in the population, by the comparing of the proportions at these ages at different years on the assumption, on the one hand, that the ratio of the blind to total population in each age group has remained the same at the different census years, an assumption indicating the results of changes in the age distribution of the general population, and on the other hand, that the age distribution of the total population has remained the same, an assumption indicating the net result of other factors, particularly the prevalence of blindness. In Table XI in Appendix A these two hypotheses are indicated, the additional percentage distributions for 1910 and 1920 being given with reference to the year 1860, with also the age distribution of the total population at these three census years. It appears that in either case the changes in the age composition of the general population are largely sufficient to explain changes in the age composition of the blind, especially as regards the older groups (there being in the second case certain slight increases in some of the earlier years of life and in some of the later).

² The apparent increases with respect to the earlier ages between 1910 and 1920 are probably due in considerable measure to more complete returns for the younger groups in the latter year.

³ In Table XII in Appendix A is given the percentage distribution according to age at occurrence of blindness for 1910 and 1920 if the risk of this had been the same in those years as it was in 1880, which is perhaps the more satisfactory means of comparison. Here there appears a steady, even if small, decrease for the blind who lose sight in childhood and youth, and also in early adult life, or till the age of twenty-five, with corresponding increases for the later periods of life. There is no great difference in the reduction at different periods in early life, though on the whole the earlier the age of the loss of vision, the more pronounced seems the diminution.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO AGE
AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION		
	1880	1910	1920
Total.....	100.0	100.0	100.0
Under 20 years.....	36.2	30.8	36.9
Under 5 years.....	21.7	16.4	20.9
Born blind.....	12.8	6.6	10.0
Under 1 year.....	2.4	5.0	5.5
1 to 4 years.....	6.4	4.8	5.4
5 to 9 years.....	6.2	5.3	6.2
10 to 19 years.....	8.4	8.3	8.2
10 to 14 years.....	4.6	4.3	4.6
15 to 19 years.....	3.9	4.0	3.5
Age not definite.....	....	0.8	1.6
20 to 59 years.....	37.4	40.7	37.2
20 to 24 years.....	4.3	4.4	3.9
25 to 34 years.....	8.4	8.7	7.8
35 to 44 years.....	9.7	10.0	9.5
45 to 54 years.....	10.4	11.4	10.4
55 to 59 years.....	4.5	5.7	5.1
Age not definite.....	....	0.7	0.5
60 years or over.....	26.4	28.5	26.0
60 to 79 years.....	21.9	23.3	21.5
60 to 64 years.....	6.3	6.7	6.3
65 to 69 years.....	5.7	6.2	5.5
70 to 74 years.....	5.8	6.1	5.7
75 to 79 years.....	4.1	4.3	4.0
80 years or over.....	4.5	4.7	4.1
Age not definite.....	....	0.4	0.4

In the following table is given the percentage distribution of male and female blind for the years 1890, 1910, and 1920 (census years fairly suitable for comparative purposes), according to whether blindness occurred at different age periods under twenty or after that time.

PERCENTAGE DISTRIBUTION OF BLIND BY SEX ACCORDING TO AGE AT OCCURRENCE
OF BLINDNESS

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION					
	MALE			FEMALE		
	1890	1910	1920	1890	1910	1920
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 years.....	32.3	29.2	34.6	33.3	33.0	40.1
Under 5 years.....	17.8	15.0	18.8	19.0	18.3	23.8
Born blind.....	9.5	6.0	9.3	9.7	7.5	11.0
Under 1 year.....	2.9	4.6	4.7	3.4	5.5	6.8
1 to 4 years.....	5.5	4.4	4.9	6.0	5.4	6.1
5 to 9 years.....	5.6	5.0	5.9	6.1	5.6	6.7
10 to 19 years.....	8.9	8.3	8.6	8.3	8.2	7.6
20 years or over.....	67.7	70.8	65.4	66.7	67.0	59.9

Possibly the apparently greater increase for females than for males in earlier life is to some extent a reflection of the larger amount of blindness occurring with males in adult life as a result of industrial accidents.

PROPORTIONS ACCORDING TO DIFFERENT CAUSES OF BLINDNESS

The whole question of the reduction of blindness hinges upon the extent to which the several causes responsible for it may be diminished. How far actual reduction is proceeding may be indicated by the distribution of blindness among particular causes over a period of time sufficiently long for comparisons. By ascertaining which causes are showing an increase in their proportions of blindness and which are showing a decrease, there may be discovered those causes which are proving more subject and those which are proving less subject to measures of control. Thus may be learned to what extent we are in the way of arresting or preventing blindness.

In the following table is given the percentage distribution for certain causes of blindness for the years 1890, 1910, and 1920.¹

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO CAUSE OF
BLINDNESS AT DIFFERENT YEARS

<i>Cause of Blindness</i>	1890	1910	1920
	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>	<i>Per Cent Distri- bution</i>
Total.....	100.0	100.0	100.0
Accident or other injury.....	20.3	15.1	16.5
Brain disease.....	6.6	2.7	2.5
Cataract.....	13.6	12.5	13.7
Glaucoma.....	0.6	3.8	5.4
Measles.....	2.5	1.8	2.2
Scarlet fever.....	1.5	1.2	1.2
Smallpox.....	1.2	0.9	0.7
All other.....	53.7	62.0	57.8

The only considerable decreases found are in the case of brain disease (which includes meningitis and a few allied diseases), the proportion at the later year being much less than one-half what it was at the earlier; smallpox, which shows a steady decline; and scarlet fever on the whole. Accidents show a decline at first, but some in-

¹ No statistics are available further back than 1890, while those for 1900 are not satisfactory on account of differences in method of classification; and, in addition, only a limited number of diseases are reported in such a manner that they can be compared with any considerable degree of trustworthiness.

crease later. The same is true of measles.¹ Conversely, glaucoma registers a very great increase—though it may be doubted that the actual increase can be as great as is indicated. Cataract on the whole shows but little change during the period in question.²

Additional indications of possible increase or decrease in different causes of blindness are to be had from our previous tables with reference to those causes of blindness specified in 1910 and 1920.³ With respect to specific eye affections, there are found to be increases, though on the whole not great, in the proportions for diseases of the conjunctiva, except trachoma; diseases of the iris; diseases of the choroid; glaucoma; diseases of the retina; progressive myopia; and cancer and other neoplasms. (In the case of the two last named disorders the proportions have at least trebled.) There are indicated decreases for diseases of the cornea, especially corneal ulcer; diseases of the optic nerve, especially atrophy of the optic nerve; diseases of the crystalline lens (cataract); and amaurosis and allied disorders.⁴

With respect to general diseases, there have been decreases, in some cases notable decreases, in the proportions for all, except syphilis (and perhaps for certain diseases not specifically enumerated at the earlier period.)⁵

With respect to accidents, there have been decreases from burns, firearms, explosives, flying objects, and cutting or piercing instruments, the decrease being most pronounced in the case of burns.⁶ There are increased proportions generally for poisoning, and decreased from foreign substances and malformations.⁷

With respect to causes of rather indefinite nature, there appear

¹ The apparent decrease for brain disease may be ascribed in no small part to changed classification, some cases of this disease being now grouped with certain other disorders, especially atrophy of the optic nerve.

² There has been on the whole a material decline in the mortality rate for the general diseases causing blindness (with the exception of venereal diseases)—a circumstance that may be taken to mean that there has been a similar, if not a corresponding, decrease in the number of cases of blindness resulting from these diseases. In the registration area of the United States, as constituted in each year reported upon, the number of deaths per 1,000,000 of general population in 1900, 1910, and 1920, respectively, for the leading diseases was as follows: measles, 12.5, 12.3, and 8.8; meningitis (including cerebrospinal fever), 40.9, 14.2, and 6.0; scarlet fever, 10.2, 11.6, and 4.6; influenza, 22.9, 14.4, and 11.5; typhoid fever, 35.9, 23.5, and 7.8; smallpox, 1.9, 0.4, and 0.6; rheumatism, 9.5, 6.2, and 3.8; syphilis, 3.4, 6.0, and 9.1; and accidents, 28.6, 84.9, and 71.4. Bureau of Census, "Mortality Statistics." Just how far the reduction in the ratio for blindness from the different diseases is keeping pace with the reduction in the mortality rate, we do not fully know.

³ See *ante*, pp. 20-26. Possibly for some diseases there have since been different movements.

⁴ The respective increases or decreases for the several diseases are much the same for either sex as for both sexes together. The main differences are in the considerable increase for opthalmia neonatorum and in the considerable decrease for cataract in the case of females.

⁵ In a few cases the decreases have been more marked for one sex than for the other.

⁶ There are increases with females for explosives, firearms, and falls.

⁷ There is an increase for males from acids and like substances.

decreases for neuralgia, sore eyes, colds, catarrh (and possibly certain disorders not separately indicated at the earlier period); and increases for others.¹

With respect to trachoma there is further evidence, and in different quarters, of its continuing decrease.² In many cities its progress is reported to have been practically halted.

Further evidence of the decrease in ophthalmia neonatorum is also to be had. From the increasing legal requirements as to the care and treatment of cases of this disease,³ even though in not a few areas their enforcement is only partial, greater or less improvement in the situation is to be looked for. In certain States no child is reported blind from this cause in the course of a single year or of even several years,⁴ while in certain cities such may be the case for a still longer period.⁵ With respect to ophthalmia neonatorum in schools for blind children additional statistics are possible for recent years. In the following table is given the percentage of new admissions thereto from 1907 to 1932 whose blindness was due to this disease.⁶

During this period the proportion of pupils entering schools for the blind who were blind from ophthalmia neonatorum has very pro-

¹ In most cases apparent increases are believed to be simply the reflection of decreases for other affections, or the results of differences in classification. (An apparent decline in the case of military service may be simply due to better classification at the later year.) There are decreases for males in the case of scrofula, and for females in the case of exposure to heat.

² In a certain area in Kentucky in ten years or so the number of cases was reduced to one-eighth. Proceedings of Conference of State and Provincial Health Authorities of North America, 1926, p. 79. On the wiping out of the disease in one county, see *News Letter*, Oct., 1916. At the Missouri School there have been no pupils blind from trachoma for a period of years. See *Journal of Missouri State Medical Association*, xxix., 1932, p. 518. With respect to immigration, see Proceedings of National Society for Prevention of Blindness, 1926, p. 82; United States Public Health Service, Bulletin, no. 19, 1914, p. 13. See also *New York Medical Journal*, lxxviii., 1903, p. 373; *Journal of American Medical Association*, lxi., 1913, p. 1110; Report of Missouri School, 1916, p. 19. On measures to overcome trachoma, see *ante*, p. 83.

³ See *ante*, p. 84.

⁴ In some States in past years the proportion of blindness attributed to ophthalmia neonatorum was as high as 10 per cent. In some homes for blind children the proportion so affected has ranged from three-fifths to four-fifths. See Report of New York Commission for Blind, 1906, p. 87; Bulletin of Massachusetts Commission for Blind, no. 1, 1909, p. 17; Proceedings of American Association of Workers for Blind, 1907, p. 25; Louis Stricker, "Blindness in Hamilton County," 1918, pp. 83, 98. See also publications of National Society for Prevention of Blindness, *passim*.

⁵ In Philadelphia of births attended by midwives the ratio of cases of sore eyes per 1000 was 10.3 in 1916, and 5.1 in 1928. Philadelphia Hospital and Health Survey, 1929, p. 332. See also Report of Connecticut Board of Education of Blind, 1930, p. 123. In some cities in the past, of babies born in hospitals from 0.3 per cent to 1.2 per cent have been affected with the disease. See Report of Committee for Prevention of Blindness, 1908, p. 2; American Association for Conservation of Vision, Monograph series, 1911, no. 1, p. 70; *Ohio Public Health Journal*, ix., 1918, p. 416.

⁶ Statistics are from publications of the National Society for the Prevention of Blindness. Nearly all the schools are represented. See also *Outlook for Blind*, xxvi., 1932, p. 105; xxvii., 1933, p. 79; Proceedings of State and Provincial Health Authorities of North America, 1930.

BLINDNESS AND THE BLIND

PERCENTAGE OF NEW ADMISSIONS BLIND FROM OPHTHALMIA
NEONATORUM

<i>Year</i>	<i>Per Cent of Total</i>	<i>Year</i>	<i>Per Cent of Total</i>
1907.....	28.2	1920.....	23.2
1908.....	26.5	1921.....	13.5
1909.....	22.6	1922.....	14.2
1910.....	20.6	1923.....	13.1
1911.....	23.9	1924.....	12.7
1912.....	21.2	1925.....	11.5
1913.....	22.7	1926.....	13.0
1914.....	19.6	1927.....	9.5
1915.....	15.1	1928.....	9.3
1916.....	19.1	1929.....	9.5
1917.....	18.4	1930.....	9.2
1918.....	14.7	1931.....	7.5
1919.....	16.9	1932.....	7.5

nouncedly decreased, or from almost three-tenths to less than one-tenth.¹ For five consecutive five-year periods since 1908 the average percentages have been 22.8, 18.7, 16.6, 12.0, and 8.9. Among new admissions in a considerable number of schools today there are none whose blindness is reported as due to this disease.

Changes in the relative proportions for the different causes of blindness seem to have been much the same for the several race and nativity groups as they have been for the blind as a whole.² With the foreign-born whites the increase for cataract has been slightly greater than with other groups, and the decrease for atrophy of the optic nerve also greater. For ophthalmia neonatorum there has been a decrease with this group not found in the others. The outstanding difference for any one group is in the case of Indians with respect to trachoma. The proportion here has almost trebled in this 10-year period. Within more recent years, however, according to other authorities, a distinct decrease is found, the proportion for certain groups in 1928 having been reduced to one-third of what it was in 1912.³ The proportion for smallpox is reduced among Indians much more than among other classes.⁴

¹ In the Pennsylvania Institution the average percentage from 1900 to 1907 was 33.0.

² Reports of Census Bureau.

³ In 11 reservations (adults and some children) the proportion affected with trachoma was 24.4 per cent in 1912, and 8.9 per cent in 1928; and in 21 reservations 24.2 per cent in 1912, and in 15 reservations 8.1 per cent in 1928. Among children the proportion in 1921 is not less than three-tenths. United States Public Health Reports, 1929, p. 2013.

⁴ In Table XIII in Appendix A is given the percentage distribution of the blind according to cause who lost sight at different broad age periods (under twenty, from twenty to forty-four, from forty-five to sixty-four, and at sixty-five or over) in 1910 and 1920. Because of different classifications at different periods, and because of changing proportions of the blind at different ages, these statistics are not to be taken at their face value with regard to present trends. Among deductions that seem less liable to impeachment, it seems

From another source is to be learned something with respect to the increase or the decrease of blindness from specific causes over a greater or less period of time. This is in a comparison of the causes in different years as found in the reports of certain schools for the blind, and relating to the blind children in them.¹ In the following tables are presented the causes of blindness, with their respective percentages, among the total number of pupils in the Pennsylvania Institution from the beginning to 1853, to 1862, and to 1866, and among new admissions triennially from 1871 to 1932 (with the exception of the years 1882-1886); among the total number in the New York State School from the beginning to 1874, among the total number in attendance annually from 1884 to 1901 (with the exception of the years 1893 and 1895-1900), and among new admissions triennially from 1902 to 1931; among the total annual attendance in the Iowa School in 1863, 1869, and 1875, and among new admissions quadrennially from 1882 to 1932 (except 1921-1924); among the total number in the Colorado School from the beginning in even years from 1886 to 1918, and biennially from 1919 to 1930 (with the exception of the years 1896 and 1898); among the total number in the Western Pennsylvania School in 1910, and among new admissions triennially from 1911 to 1932; and among new admissions in the Perkins (Massachusetts) Institution from 1918 to 1932.²

With respect to blindness accredited to accidents (trauma) a greater or less decrease is to be observed in all the schools. It is possible that in a certain proportion of cases what were once set down to accidents have later been ascribed to more particular affections. (In the disorder designated as sympathetic ophthalmia there are probably in that cataract and certain diseases of venereal character are, if not increasing, at least showing no signs of reduction in the earlier years of life. There are also seeming increases for certain forms of accidents in early life, especially those occurring in industrial processes. In early and middle adult life little sign of reduction is shown by cancer and other neoplasms. In the late years of life smallpox as a cause of blindness appears at least to be holding its own.

¹ Statistics here are far from satisfactory. They have not always been compiled according to scientific principles, and there has often been wanting reliable ophthalmic examination, this being especially true with respect to the earlier periods; and doubtless not a little of the apparent movement of certain diseases has been influenced by the method of reporting, or by the classification adopted. (In many cases the parents of pupils have themselves been ignorant, and have been unable to give the exact cause of blindness. Frequently "born blind" has been considered a sufficient statement.) Of later years better and more precise methods of classification have been employed. Causes are often of a compound nature. It is also to be borne in mind that the value of the figures for general comparative purposes is limited, for the reason that the diseases listed are almost entirely those which occur in the years of childhood or youth, with but little reference to those which affect the sight at later ages.

² See also reports of schools in Idaho, Maryland, Nebraska, New Mexico, North Carolina, Oregon, Wisconsin, and other States; *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101; Bulletin of Missouri Board of Charities and Correction, no. 3, 1910, p. 60. See in particular Report of Pennsylvania Institution, 1853, p. 34.

PERCENTAGE DISTRIBUTION OF PUPILS IN PENNSYLVANIA INSTITUTION BY CAUSE OF BLINDNESS

Cause	1833-1853	1833-1866	1871-1873	1874-1876	1877-1879	1880-1882	1880-1888	1880-1891	1892-1894	1895-1900	1898-1900	1901-1903	1904-1906	1907-1909	1910-1912	1913-1915	1916-1918	1919-1921	1922-1924	1925-1927	1928-1930	1931-1932	
Total.....	237	476	592	81	103	92	88	74	133	98	101	77	117	138	97	78	77	106	131	125	118	160	71
Congenital.....	7.6	9.7	13.0	23.5	21.4	16.7	9.1	21.6	17.9	17.4	20.8	23.4	25.2	26.1	21.6	10.3	8.9	14.5	8.4	6.5	3.4	3.1	2.8
Accidents.....	18.1	18.9	19.1	21.0	21.4	13.0	23.9	8.1	13.5	14.3	10.9	9.9	6.0	8.0	10.3	10.3	8.9	14.5	8.4	6.5	3.4	3.1	2.8
Amaurosis.....	13.9	14.1	12.7	4.9	1.0	2.2	3.4	40.5	25.5	21.4	13.8	2.6	4.3	1.6	2.1	2.6	1.4	7.8	6.1	8.9	13.6	15.6	16.9
Ophthalmia.....	31.2	23.9	21.8	21.0	31.0	14.1	1.0	1.0	1.3	1.0	12.8	2.6	10.3	7.2	12.4	17.9	16.9	16.9	26.4	11.1	14.4	21.1	15.5
Cataract.....	8.9	6.7	6.4	7.4	1.0	1.0	4.6	5.4	14.3	9.2	12.8	26.3	34.1	28.2	34.1	35.1	28.2	24.6	23.9	21.4	15.2	11.1	9.4
Atrophy of optic nerve.....																							
Ophthalmia neonatorum.....																							
Trachoma.....																							
Smallpox.....	4.4	4.4	4.2	4.9	2.9	3.3	4.6	5.4	2.5	2.0	1.3	2.2	3.2	2.2	1.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
Scarlet fever.....	2.5	2.9	3.0	8.6	3.9	8.7	5.7	4.0	1.3	3.1	1.0	6.5	2.5	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Measles.....	2.5	2.5	2.5																				
Scrofula.....	1.3	1.7	2.0	1.2		2.2	3.4		0.7	3.1	2.6		0.8										
Glaucoma.....																							
Meningitis.....																							
Choroiditis.....																							
Keratitis.....																							
Retinitis.....																							
Miscellaneous and unknown.....	9.6	14.8	14.8	3.8	19.5	27.9	44.2	6.7	11.4	18.4	21.8	3.6	13.4	7.9	6.1	10.3	18.9	14.9	25.8	28.6	12.7	34.2	33.9

PERCENTAGE DISTRIBUTION OF PUPILS IN NEW YORK STATE SCHOOL BY CAUSE OF BLINDNESS

Cause	1874	1884	1885	1886	1887	1888	1889	1890	1891	1892	1894	1901	1902-1904	1905-1907	1908-1910	1911-1913	1914-1916	1917-1919	1920-1922	1923-1925	1926-1928	1929-1931
Total.....	270	174	186	163	159	140	182	201	220	243	254	134	75	65	76	79	110	73	73	71	75	72
Congenital.....	18.5	13.2	15.1	11.1	12.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Accidents.....	17.4	10.0	17.7	23.3	16.4	7.2	8.2	7.5	7.0	7.0	6.3	7.4	8.0	1.5	.....	1.3	1.8	5.5	11.0	8.5	2.7	7.0
Inflammation.....	32.2	21.8	22.0	19.6	30.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cataract.....	8.2	5.2	5.9	5.5	7.5	8.5	9.3	10.5	10.0	10.3	10.0	6.7	13.3	15.4	9.2	19.0	16.4	23.3	17.8	21.1	14.7	18.0
Atrophy of optic nerve.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ophthalmia neonatorum.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trachoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glaucoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sympathetic ophthalmia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blennorrhoea ophthalmia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Keratitis.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Retinitis.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scrofula.....	1.9	1.1	1.6	.....	1.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smallpox.....	3.0	2.3	2.1	1.9	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scarlet fever.....	3.0	6.5	6.5	5.5	5.7	5.7	4.9	4.8	4.9	4.3	2.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Measles.....	3.0	1.7	1.0	1.9	0.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Meningitis.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous and unknown.....	12.8	23.8	20.4	25.0	19.0	17.8	29.2	29.2	29.8	29.4	28.0	37.0	25.3	32.2	37.9	21.2	31.9	25.9	34.3	36.6	35.8	29.1

PERCENTAGE DISTRIBUTION OF PUPILS IN IOWA SCHOOL BY CAUSE OF BLINDNESS

	1863	1869	1875	1882- 1885	1886- 1889	1890- 1893	1894- 1897	1898- 1901	1902- 1905	1906- 1909	1910- 1913	1914- 1916	1917- 1920	1925- 1928	1929- 1931
Total.....	70	182	153	123	150	154	154	135	137	102	116	90	73	281	298
Congenital.....	10.0	13.2	13.7	9.0	10.0	9.7	12.3	2.2	3.0	1.0	1.8	....	....	17.9	23.0
Accidents.....	14.3	21.0	5.2	17.1	12.7	13.6	10.4	10.4	0.7	2.0	0.9	....	1.4	5.3	5.4
Amatosis.....	4.3	2.8	4.6	0.8	0.6	0.6	....	....	0.7	....	....	....	....	....	....
Ophthalmia.....	37.1	0.6	....	0.8	2.0	3.9	....	....	....	....	....	....	....	....	....
Inflammation.....	32.9	32.0	32.0	5.7	4.0	1.2	....	....	....	....	....	....	....	....	....
Cataract.....	....	3.3	2.0	3.2	2.6	0.6	4.7	5.9	16.2	6.9	12.2	3.3	6.9	17.9	15.3
Atrophy of optic nerve.....	....	....	....	0.8	2.0	0.6	1.3	3.0	15.4	14.7	20.7	11.1	8.2	7.9	15.1
Trachoma.....	....	....	....	1.6	6.6	4.7	1.9	1.5	7.4	5.9	3.5	1.1	1.4	1.7	....
Glaucoma.....	....	....	....	....	....	....	....	0.7	2.2	1.0	2.6	3.3	2.8	3.9	5.4
Symphathetic ophthalmia.....	....	....	....	0.8	....	3.9	0.6	3.6	3.7	5.9	7.0	....	1.4	1.7	....
Keratitis.....	....	....	....	....	....	....	0.6	0.7	4.4	5.9	5.2	4.4	13.8	5.3	....
Phthisis bulbi.....	....	....	....	....	....	....	....	4.4	5.9	7.8	13.9	16.7	4.2	1.4	5.5
Astigmatism.....	....	....	....	....	....	....	3.3	2.2	8.8	7.8	0.9	1.1	....	....	....
Scrofula.....	5.7	5.0	11.7	6.5	2.6	5.2	....	....	....	....	....	....	....	....	....
Smallpox.....	12.9	5.0	2.6	0.8	0.6	0.6	3.3	1.5	....	....	....	....	....	....	....
Scarlet fever.....	....	....	....	3.2	1.3	1.9	3.3	9.6	....	....	....	....	....	....	....
Measles.....	2.0	2.2	2.6	3.2	4.0	8.4	5.8	1.5	....	....	....	....	....	....	....
Meningitis.....	....	....	....	4.1	4.0	1.8	1.9	1.5	....	1.0	....	....	....	....	....
Miscellaneous and unknown.....	12.8	13.1	25.6	42.4	46.9	43.3	53.9	52.8	31.6	40.1	24.3	59.0	59.7	31.0	31.3

PERCENTAGE DISTRIBUTION OF PUPILS IN COLORADO SCHOOL BY CAUSE OF BLINDNESS

	1883- 1886	1883- 1888	1883- 1890	1883- 1892	1883- 1894	1883- 1900	1883- 1902	1883- 1904	1883- 1906	1883- 1908	1883- 1910	1883- 1912	1883- 1914	1883- 1916	1883- 1918	1883- 1920	1883- 1922	1883- 1924	1883- 1926	1883- 1928	1883- 1930
Total.....	23	20	46	60	77	149	105	178	195	213	232	240	252	266	283	597	622	674	727	781	825
Congenital.....	4.3	17.2	17.4	13.3	14.3	18.1	19.4	20.2	22.6	22.1	22.0	22.1	23.0	24.4	25.4	25.7	27.5	26.4	24.8	23.8	23.0
Accidents.....	8.7	13.8	17.4	23.3	19.5	20.1	18.8	18.5	16.9	16.4	16.4	17.9	17.4	21.4	19.1	19.3	19.1	19.0	19.0	18.5	18.0
Inflammation.....	21.7	20.3	8.7	18.3	14.3	10.8	9.7	9.0	8.2	6.6	7.7	7.5	7.1	6.8	6.4	6.0	5.8	5.6	5.2	4.9	4.6
Cataract.....	....	....	....	....	....	....	....	....	1.5	1.4	1.3	1.3	1.2	1.1	1.4	1.0	1.1	1.8	1.7	1.7	1.9
Atrophy of optic nerve.....	....	....	....	1.7	1.3	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.7	0.6	0.7	1.4	1.7
Trachoma.....	....	....	....	....	....	2.0	2.4	2.8	2.6	2.3	2.1	2.1	2.0	1.9	1.6	2.7	1.6	1.5	1.4	1.3	1.2
Scrofula.....	....	....	....	....	....	2.6	1.3	1.2	1.1	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Smallpox.....	8.7	6.8	6.5	6.7	7.8	4.0	3.6	3.4	3.1	2.8	3.0	2.9	2.8	2.6	2.5	2.3	2.2	2.4	2.3	2.2	2.1
Scarlet fever.....	4.3	3.4	2.2	1.7	2.6	3.0	2.8	3.0	2.8	3.1	3.3	3.0	2.9	2.8	2.6	2.5	2.3	2.2	2.3	2.3	2.1
Measles.....	17.4	10.2	4.3	3.3	6.5	5.4	4.8	4.5	4.1	4.7	4.3	4.2	3.9	3.8	3.6	4.0	3.4	3.3	3.3	3.3	3.4
Meningitis.....	8.7	3.4	4.3	5.0	5.2	4.7	4.2	4.5	4.1	4.2	3.9	3.9	3.6	3.4	3.2	3.0	2.8	2.7	2.6	2.5	2.4
Colds.....	....	....	....	8.7	6.5	3.4	3.0	2.8	2.6	3.3	3.0	2.9	2.8	2.6	2.5	2.3	2.2	2.2	2.1	2.0	2.0
Miscellaneous and unknown.....	26.2	24.9	26.2	17.2	19.4	26.2	29.3	29.8	19.7	31.6	32.1	31.1	32.2	28.2	30.8	30.4	30.7	32.6	34.0	35.9	36.1

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF PUPILS IN WESTERN PENNSYLVANIA SCHOOL BY CAUSE OF BLINDNESS

	1910	1911- 1912	1913- 1914	1915- 1916	1917- 1918	1919- 1920	1921- 1922	1923- 1924	1925- 1926	1927- 1928	1929- 1930	1931- 1932
Total.....	144	49	38	42	57	61	35	24	51	42	39	32
Accidents.....	13.2	16.3	13.2	9.5	5.3	8.2	17.2	8.3	19.6	11.8	15.4	9.4
Congenital.....	...	...	...	...	12.2	8.2	...	20.9	...	7.2	2.6	3.1
Buphthalmos.....	0.7	...	...	2.4	7.0	1.6	2.8	...	5.9	7.2	7.7	6.2
Amblyopia.....	...	...	...	4.8	1.8	...	2.8	...	...	2.4	5.1	3.1
Cataract.....	11.5	18.3	15.8	9.5	7.0	16.4	11.4	4.2	15.6	28.8	26.4	12.5
Microphthalmus.....	0.7	6.1	5.3	...	...	1.6	...	...	...	...	...	...
Atrophy of optic nerve.....	13.2	12.2	26.4	14.3	12.2	16.4	34.4	8.3	27.5	11.8	23.1	21.9
Ophthalmia neonatorum.....	27.8	14.4	18.4	26.2	29.8	21.3	8.6	12.5	2.0	11.8	7.7	12.5
Detached retina.....	2.1	2.1	...	2.4	...	...	...	...	5.9	2.4	...	...
Phthisis bulbi.....	9.7	4.2	7.9	2.4	1.8	3.3	...	4.2	...	4.7	...	6.2
Keratitis.....	10.4	2.1	2.6	14.3	3.6	9.9	2.8	8.3	...	4.7	...	...
Retinitis pigmentosa.....	...	6.1	...	...	5.3	1.6	...	4.2	...	2.4	...	...
Choroiditis.....	1.4	...	...	11.8	...	5.0	2.8	8.3	4.0	...	5.1	6.2
Corneal leucoma.....	...	6.1	...	...	...	3.3	5.6	...	...	...	...	9.4
Miscellaneous.....	9.2	10.1	10.4	2.4	14.0	1.6	11.4	20.8	19.5	4.8	12.9	21.5

PERCENTAGE DISTRIBUTION OF PUPILS IN PERKINS INSTITUTION BY CAUSE OF BLINDNESS

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Total.....	63	49	63	55	50	50	42	43	38	52	39	44	48	57	55
Ophthalmia neonatorum.....	11.1	10.2	26.4	18.2	12.0	12.0	9.5	18.4	13.2	3.9	5.1	...	2.1	12.3	...
Congenital defects.....	...	...	6.4	5.5	6.0	16.0	23.8	11.6	7.9	9.6	12.5	27.3	...	...	...
Atrophy of optic nerve.....	9.5	14.3	15.8	21.8	10.0	28.0	14.4	20.9	29.0	30.8	18.0	20.4	20.6	38.4	40.0
Accidents.....	4.8	8.2	7.9	14.6	8.0	6.0	4.9	2.3	2.7	5.8	5.1	4.5	...	1.8	...
Congenital cataract.....	12.7	12.3	14.3	10.2	14.0	...	4.9	9.3	15.8	7.8	18.0	11.4	12.5	3.5	7.3
Buphthalmos.....	1.5	4.1	3.2	1.8	2.0	2.0	...	2.3	5.3	3.9	5.1	6.9	4.2	7.0	3.6
Keratitis.....	6.3	12.3	3.2	12.8	2.0	2.0	7.2	4.6	5.3	2.0	7.7	6.9	...	1.8	3.6
Corneal opacities.....	1.5	...	...	1.8	...	2.0	...	2.3	2.6	2.0	2.6	4.5	...	1.8	...
Glaucoma.....	1.5	2.0	1.6	...	4.0	2.0	...	2.3	...	2.0	...	4.5	...	...	...
Microphthalmus.....	1.5	...	3.2	...	2.0	...	2.5	...	2.3	2.0	...	...	4.2	...	9.1
Congenital amblyopia.....	11.1	...	3.2	3.6	4.0	...	7.2	...	...	...	...	...	...	5.2	...
Albinism.....	7.9	2.0	1.6	...	4.0	8.0	2.5	...	...	5.8	...	...	...	3.5	...
Miscellaneous.....	30.6	24.6	16.4	10.0	3.0	22.0	24.0	27.0	15.9	24.4	25.9	13.6	56.4	24.7	36.4

cluded varied complaints; it does not have uniform report.) In practically all the general diseases to which blindness has been attributed there has been a steady decline from the beginning, the proportion therefrom for the most part having now been nil for a number of years; they have ceased to be recorded as causes of blindness. Included are meningitis, smallpox, scarlet fever, measles, scrofula, and colds. With respect to affections bearing more directly upon the loss of sight, or more intimately connected with the structure or functioning of the eye, the tendencies are of more varying character. With atrophy of the optic nerve there seems to be a certain increase in virtually all cases. Cataract, if taken alone, shows either no change or a plain increase. When taken in conjunction with congenital cataract (sometimes referred to as congenital blindness), there appears on the whole little change.¹ (In "congenital blindness" itself there is a general decrease, in some schools not now being separately enumerated.)² In general glaucoma shows a decrease, having in most schools reached total elimination, probably in large part because of classification elsewhere. Trachoma presents likewise a general decline. In ophthalmia neonatorum there is the most marked decrease, this being manifest everywhere. Purulent ophthalmia and blennorrhea ophthalmia are probably little else than ophthalmia neonatorum, and are going its way. Such may also doubtless in large part be said of what are called "inflammation" and "ophthalmia." Amaurosis (probably including ophthalmia neonatorum and disorders of the conjunctiva and retina) is another disease that has practically disappeared in the nomenclature of causes of blindness in the schools. Retinitis, reported of the more recent years as a general thing, shows no great change. For choroiditis the situation is much the same. For keratitis there is found an increase in some schools, and a decrease in others. Trends with phthisis bulbi are as yet not to be discerned. Where reported, buphthalmos registers an increase. So do corneal opacities. With congenital defects there is a considerable increase set down, in large part do doubt as a result of changed classification. For other affections listed only here and there—retinitis pigmentosa, detached retina, albinism, corneal leucoma, microphthalmus, and amblyopia—little change is manifested. (In addition to the affections mentioned, there are of later years a number included under miscellaneous causes, such as

¹ Cataract, often manifesting itself at birth, probably constitutes a considerable part of congenital blindness. It is sometimes difficult to determine whether certain cases should be listed as "cataract" or as "congenital." What proportion "congenital" cataract is of all cataract or of all congenital blindness, we do not know.

² In earlier times many cases were set down as congenital, which in later times would have been distributed among other causes.

progressive myopia, iritis, disorganized globes, dislocation of lens, brain tumor, aniridia, staphylomia, neuritis, congenital lues, glioma, retinal atrophy, chorio-retinitis, coloboma, anophthalmus, irido-cyclitis—besides occasionally some general or other complaint—these being chargeable singly with only a small amount of blindness.) For many of the minor affections responsible for blindness in the schools cases are too infrequent to permit any considerable deductions as to their trends. The tendency today is toward the recording of the original or underlying causes, with the use of more specific and more precise terms.¹

PROPORTIONS OF INJURIES TO EYE FROM INDUSTRIAL ACCIDENTS

With respect to injuries to the eye a special source of information is to be found in the reports of certain States in the matter of accidents in general occurring in industrial operations, especially as to the possible movements of both over a series of years, and as to possible changes in the ratio between the two.² In the following table are given the total number of accidents reported and the number of those to the eye, together with the percentage which the latter constitutes of the former, for the State of New York from 1924 to 1931, for Illinois from 1921 to 1930, and for Washington from 1918 to 1931; and corresponding figures with respect to accidents involving permanent disability in California from 1924 to 1931 and in Maryland from 1916 to 1931.³

In New York and Washington in the period under review there appears on the whole to have been a steady increase both in the number of accidents in general and in accidents to the eye, with little difference in the ratios between the two. In Illinois there is an increase in both cases, but apparently to a less extent in the case of accidents to the eye, the ratio between the two kinds showing a slight decrease. In California there is an increase in both cases, with virtually no change in the ratios. In Maryland the figures are of too fluctuating a character to permit any conclusions as to trends; the ratio between the two kinds of accidents remains fairly constant.

¹ Among pupils in the various schools for the blind in the United States (a few not making report) the percentages for different causes in the years 1927, 1928, 1929, 1930, 1931, and 1932 were as follows: ophthalmia neonatorum—19.4, 17.3, 17.5, 16.7, 14.0, 12.7; trachoma—1.5, 1.6, 1.4, 1.3, 1.2, 1.1; progressive myopia—1.9, 2.0, 1.5, 2.2, 2.2, 3.1; interstitial keratitis—3.0, 2.9, 3.5, 2.5, 3.0, 2.7; phlyctenular keratitis—0.5, 0.6, 0.9, 0.6, 0.9, 1.6; atrophy of optic nerve—13.4, 13.9, 14.2, 14.8, 13.8, 12.3; accidents—9.1, 9.5, 9.2, 9.3, 8.2, 8.0; congenital cataract—13.5, 13.9, 14.9, 15.9, 14.9, 13.8; other congenital causes—16.1, 16.4, 12.9, 12.5, 13.3, 13.4; miscellaneous causes—21.6, 21.9, 24.0, 24.2, 28.5, 31.3. Data from National Society for Prevention of Blindness.

² In not many States are statistics of this nature kept for a sufficient number of years to permit comparisons.

³ Statistics are taken from reports of State departments of labor, industrial accident commissions, etc., and to some extent furnished directly through the courtesy of such bodies.

BLINDNESS AND THE BLIND

PERCENTAGE OF ACCIDENTS TO EYE IN CERTAIN STATES AT DIFFERENT YEARS

YEAR	NEW YORK			ILLINOIS			WASHINGTON			CALIFORNIA			MARYLAND		
	All Ac- cidents	Acci- dents to Eye	Per Cent of Total	All Ac- cidents	Acci- dents to Eye	Per Cent of Total	All Ac- cidents	Acci- dents to Eye	Per Cent of Total	All Ac- cidents	Acci- dents to Eye	Per Cent of Total	All Ac- cidents	Acci- dents to Eye	Per Cent of Total
1915.....	.....	.....	..	.....	.....	..	.....	.....	..	.....	.....	...	233	13	5.6
1916.....	.....	.....	..	.....	.....	..	.....	.....	..	.....	.....	...	335	19	5.7
1917.....	.....	.....	..	.....	.....	..	.....	.....	..	.....	.....	...	.....	37	..
1918.....	.....	.....	..	.....	.....	..	27,306	412	1.5	.....	.....	...	692	51	7.3
1919.....	.....	.....	..	.....	.....	..	22,273	463	2.1	.....	.....	...	755	67	8.8
1920.....	.....	.....	..	38,289	1496	3.9	26,293	377	1.4	.....	.....	...	780	64	8.2
1921.....	.....	.....	..	.....	.....	..	20,016	442	2.3	.....	.....	...	606	39	6.4
1922.....	.....	.....	..	.....	.....	..	27,355	461	1.7	.....	.....	...	610	41	6.7
1923.....	.....	.....	..	43,522	1887	4.3	30,785	520	1.7	.....	.....	...	757	57	7.5
1924.....	72,983	2048	2.8	61,810	2544	4.0	39,055	777	2.0	3436	351	10.2	956	73	7.6
1925.....	76,216	2311	3.0	54,184	2309	4.3	42,387	689	1.6	3318	335	10.9	927	61	6.6
1926.....	90,673	3025	3.1	.....	.....	..	42,500	750	1.8	3332	339	10.2	987	77	7.9
1927.....	98,984	2948	3.0	52,591	2053	3.9	43,081	714	1.7	3035	366	10.1	1178	80	6.9
1928.....	93,505	2929	3.1	54,750	1761	3.3	47,877	789	1.6	3821	337	10.3	1194	91	7.6
1929.....	100,468	2912	2.9	56,167	1870	3.4	59,930	797	1.6	3601	370	10.3	1286	76	5.9
1930.....	109,848	3200	3.0	42,336	1341	3.2	45,497	740	1.6	3675	388	10.3	675	63	9.3
1931.....	103,046	2740	2.7	.....	.....	..	36,076	611	1.7	3423	314	9.2	547	40	7.3

In the following table are given for the State of Pennsylvania from 1916 to 1931 the number of accidents in general, of accidents to the eye, of compensated accidents to the eye, of compensated permanent injuries, of compensated cases of loss of eye, and of compensated cases of loss of both eyes—together with the percentage of accidents to the eye and of compensated accidents to the eye among all accidents, and the percentage of cases of loss of eye and of loss of both eyes among compensated permanent injuries.¹

PERCENTAGE OF ACCIDENTS TO EYE IN PENNSYLVANIA AT DIFFERENT YEARS

Year	All Accidents	Accidents to Eye	Per Cent of All Accidents	Compensated Accidents to Eye	Per Cent of All Accidents	Compensated Permanent Injuries	Compensated Loss of Eye	Per Cent of All Compensated Permanent Injuries	Compensated Loss of Both Eyes	Per Cent of All Compensated Permanent Injuries
1916.....	255,616	20,665	8.1	....	..	646	357	55.3	9	1.4
1917.....	227,880	15,822	6.9	....	..	681	370	54.3	2	0.3
1918.....	184,844	11,727	6.3	....	..	1301	683	52.5	15	1.1
1919.....	152,544	9,604	6.3	....	..	1286	651	50.5	18	1.4
1920.....	174,979	11,497	6.7	....	..	1328	664	50.0	24	1.7
1921.....	138,273	9,174	6.6	2,590	1.9	1333	653	48.9	17	1.3
1922.....	144,365	9,360	6.5	2,214	1.5	1173	627	53.5	14	1.2
1923.....	198,023	13,911	7.0	3,105	1.8	2503	621	24.8	21	0.8
1924.....	175,330	12,630	7.2	2,772	1.6	3360	637	19.3	20	0.6
1925.....	174,370	12,266	7.0	2,728	1.5	3370	526	15.6	10	0.3
1926.....	178,284	12,215	6.8	2,667	1.5	3563	556	15.8	17	0.5
1927.....	158,690	10,735	7.0	2,565	1.6	3480	569	16.3	15	0.4
1928.....	150,433	9,781	6.5	2,945	1.9	3334	491	14.7	19	0.6
1929.....	164,657	10,970	6.7	3,411	2.1	3558	542	15.2	17	0.5
1930.....	142,917	9,283	6.5	3,304	1.6	3411	468	13.7	19	0.6
1931.....	109,976	6,400	5.8	2,542	2.3	3462	431	12.4	17	0.5

There has been here on the whole a slow but gradual decline in the number of accidents of all kinds, including those to the eye, the ratio between the two remaining fairly constant. Among permanent injuries, however, the reduction is much more pronounced in the case of those involving the loss of an eye, evident no less in the ratios, though this is not true with respect to loss of both eyes.

In the following table are given for Massachusetts from 1919 to 1931 the number of accidents to one eye and the number of those to both, together with the percentage which the latter constitutes of the former; and the number of specific accidents (total permanent disability or loss of member) and of those to the eye (resulting in reduction of vision to 20/70 or less, including loss of sight), together with the percentage of the one to the other.

Accidents to one eye and to both eyes alike seem on the whole to be somewhat fewer in later years than in earlier. Specific accidents to the eye fluctuate considerably during the period, which is also the case with the ratio between them and all specific accidents.

¹ See in particular *Labor and Industry*, xix., 1932, 2, Feb.

PERCENTAGE OF ACCIDENTS TO EYE IN MASSACHUSETTS AT DIFFERENT YEARS

<i>Year</i>	<i>Accidents to One Eye</i>	<i>Accidents to Both Eyes</i>	<i>Per Cent of Accidents to One Eye</i>	<i>All Specific Accidents</i>	<i>Specific Accidents to Eye</i>	<i>Per Cent of All Specific Accidents</i>
1919.....	4661	357	7.6	1517	115	7.6
1920.....	3174	272	8.6	1524	88	5.8
1921.....	2445	228	9.5	1277	107	8.5
1922.....	2014	218	10.8	1195	81	6.8
1923.....	2537	249	9.8	1430	112	7.8
1924.....	2412	219	9.1	1170	103	8.8
1925.....	2374	215	9.2	1150	82	7.1
1926.....	2225	214	9.6	1125	84	7.5
1927.....	2527	197	7.6	1175	101	8.7
1928.....	2107	196	9.3	1069	73	6.9
1929.....	2147	229	10.7	1232	82	6.6
1930.....	2181	208	9.5	1080	95	8.8
1931.....	1511	164	10.8	937	82	8.8

Whatever possible increase there may be for accidents to the eye is to a very large extent attributable simply to the general industrial developments of the different States. Whether accidents to the eye are gaining or losing in relation to accidents in general—whether the eye is receiving more or less care and protection as compared with the other parts of the body in the industrial progress of the times—we are not, with our present limited statistics, in a position fully to say.¹ Our figures at any rate afford little sign of any material reduction of injuries to the eye occasioned in industry in the United States. Nor is there denoted how far the present safety movements are having effect upon the situation. For any real determination of the matter we shall probably have to wait some years.

In the following table are given the percentages for all specific injuries and of those to the eye, according to means of causation, in Massachusetts from 1920 to 1931.²

So far as any material change is perceptible here, it lies in the circumstance that, while the proportion of accidents in general in wood-working machinery is perhaps decreasing, such is not the case with respect to those to the eye; and that the proportion of injuries to the eye from fires, explosions, etc. is possibly decreasing.

¹ In some degree increases are doubtless affected by more thorough or more accurate reporting at different years.

² For accidents to the eye from flying objects the frequency rates in a portion of the iron and steel industries for each year from 1913 to 1924 have been: 2.9, 2.1, 1.7, 1.9, 1.6, 1.3, 1.1, 0.5, 0.4, 0.2, 0.3. Bulletin of United States Bureau of Labor Statistics, no. 298, 1922, p. 49. See also Louis Resnick and L. H. Carris, *op. cit.*, p. 11. In Table XIV in Appendix A is given the percentage distribution of all accidents and of accidents to the eye, according to the means by which they are caused, in New York State for the years 1924, and from 1927 to 1930. (New York State Department of Labor, Special Bulletin no. 164, 1930, p. 38.)

MOVEMENT OF BLINDNESS

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PERCENTAGE OF ACCIDENTS TO EYE BY MEANS IN MASSACHUSETTS AT DIFFERENT YEARS

YEAR	PER CENT OF TOTAL											
	METAL WORKING MACHINERY		WOOD-WORKING MACHINERY		FIRES, EXPLOSIONS, ETC.		HANDLING OF OBJECT		HAND TOOLS		MISCELLANEOUS	
	All	Eye	All	Eye	All	Eye	All	Eye	All	Eye	All	Eye
1920.....	21.8	16.9	14.2	4.5	1.3	10.1	10.0	3.4	5.5	49.8	47.2	15.3
1921.....	22.3	11.9	13.1	1.9	1.8	8.3	14.2	7.4	7.2	46.8	41.4	23.7
1922.....	15.8	17.3	15.1	8.6	1.8	12.4	13.9	4.9	6.2	39.5	47.2	17.3
1923.....	19.9	11.6	15.6	3.6	1.5	13.4	11.6	7.1	5.9	44.6	45.5	19.7
1924.....	20.3	15.5	16.3	4.8	1.2	7.8	13.0	8.7	7.3	41.8	41.9	21.4
1925.....	17.7	9.6	16.9	2.4	1.9	16.9	13.0	3.6	6.9	38.6	43.6	28.9
1926.....	18.8	4.8	18.2	3.6	1.1	7.2	14.7	10.8	8.3	51.2	38.9	22.4
1927.....	17.5	9.9	14.2	4.0	1.3	9.9	13.8	2.0	7.8	49.8	45.4	24.4
1928.....	17.4	9.6	13.6	4.1	0.7	6.8	13.9	2.7	8.0	54.9	46.4	21.9
1929.....	17.9	7.3	12.6	3.7	1.1	6.1	15.5	6.1	8.0	47.8	44.9	29.0
1930.....	19.8	10.5	12.1	9.4	2.0	1.3	14.9	5.2	7.6	42.1	43.6	31.5
1931.....	17.7	8.5	12.9	3.7	1.4	6.1	15.3	3.7	9.5	56.1	43.2	24.9

In the following table are given the percentages for all specific injuries, for injuries to one eye, and for injuries to both eyes, according to manner of causation, in Massachusetts from 1919 to 1931.¹

PERCENTAGE OF ACCIDENTS TO EYE BY MANNER IN MASSACHUSETTS AT DIFFERENT YEARS

YEAR	PER CENT OF TOTAL											
	BRUISES, CON- TUSIONS, AND ABRASIONS			BURNS AND SCALDS			CUTS, PUNC- TURES, AND LACERATIONS			MISCELLANEOUS		
	All	One Eye	Both Eyes	All	One Eye	Both Eyes	All	One Eye	Both Eyes	All	One Eye	Both Eyes
1919.....	26.9	4.0	0.6	5.6	8.6	25.2	32.4	6.7	0.6	35.1	80.7	73.6
1920.....	25.8	6.8	0.4	4.8	9.3	35.3	33.3	9.2	1.1	36.1	74.8	63.2
1921.....	25.8	5.6	0.9	4.6	8.7	26.9	31.8	9.3	2.2	37.8	76.4	70.0
1922.....	24.5	6.0	0.5	4.3	9.2	38.2	31.4	11.5	0.5	39.2	73.3	61.8
1923.....	24.6	6.4	0.4	4.3	10.0	24.8	30.8	11.1	0.8	40.3	72.5	74.0
1924.....	23.0	7.5	2.8	4.4	10.0	27.7	31.1	12.1	0.4	41.5	70.4	69.1
1925.....	23.7	13.0	14.4	4.5	8.1	21.8	30.2	11.2	1.8	41.6	67.7	62.0
1926.....	22.1	7.5	...	3.8	9.5	25.7	30.7	13.3	0.5	43.4	69.7	73.8
1927.....	19.8	6.0	...	4.0	11.0	37.5	32.7	14.1	...	43.5	68.9	62.5
1928.....	18.7	6.9	3.0	4.1	12.3	37.5	32.5	23.5	2.9	44.7	57.3	62.5
1929.....	19.0	6.9	1.0	4.1	12.5	39.1	29.9	13.9	0.5	47.0	66.4	59.4
1930.....	17.9	7.1	3.3	3.5	12.8	33.3	28.9	14.1	...	49.7	66.0	63.4
1931.....	19.2	7.2	4.3	3.9	10.5	34.7	25.3	17.5	0.6	51.6	64.8	60.4

In the three leading forms of injuries to the eye here set forth there is at least no evidence of a diminution in the course of the years. For any full information upon the subject we must wait for fuller and wider statistics.

¹ In Table XV in Appendix A are given similar figures for the State of New York from 1924 to 1930.

As to one form of accidents to the eye, however, though not occasioned in industry, a somewhat encouraging report is to be made. This is in respect to accidents occurring in connection with Independence Day celebrations. As a result of efforts to regulate, if not to eliminate, the use of dangerous fireworks on this occasion—to have a “safe and sane Fourth”—injuries to the eye, especially such as result in blindness, have shown a constant decrease of late years; in fact they have become so few that they have ceased to be recorded by the American Medical Association, as was its practice for a time.¹

One further method remains for shedding light upon our question whether or not blindness is increasing relatively to the general population. This is in the opinion of professors of diseases of the eye in certain of the leading medical schools of the country, in reply to special inquiries. So far as an opinion is expressed, this is that blindness is tending to decrease.

GENERAL CONCLUSIONS AS TO MOVEMENT OF BLINDNESS

From all that has now been said, we may be in some position to discover in what directions there are signs of hope in the matter of the prevention of blindness. With respect to the age of those upon whom blindness falls, it may well be concluded that it is hardly other than decreasing among all groups in the population, or at all stages of life, medical science not failing to be at work at any period to overcome eye disorders, whether specific or general. This decline becomes apparently the more pronounced in a descending scale, or towards the early years of life. In the latter circumstance there is particular encouragement. Not only is a large part of life saved from the burden of blindness, but by the reduction of blindness in early life, this affliction as a whole is being struck at in large degree at peculiarly strategic points. It is toward such blindness, or that of infancy and childhood, that much of the special campaign against blindness has been directed; and evidence is now presented that this campaign is bearing fruit.

Next we are to find what forms of diseases (or accidents) are appearing to give way in our attacks, and what ones remain stubborn, and as yet unconquered, adversaries. Without doubt certain affections, both of a general nature and pertaining specifically to the eye, are becoming responsible for less and less blindness with the course of time. This is mainly due to better care and treatment of the eyes

¹ From 1903 to 1916 figures were published in the *Journal of the American Medical Association*. During this period cases of injury to the eye decreased from one hundred or close thereto to one-fifth or one-tenth as many, while cases of blindness decreased from around a score to one or two, sometimes to none at all. As to present conditions, see *ante*, p. 101.

when they are under attack from such maladies, or to better ophthalmic practice, together with important preventive work, including better general care of the organ of vision.¹

Among specific affections of the eye, the one that seems most rapidly to be yielding before us is ophthalmia neonatorum. It is showing a decided decrease with the years, largely as the result of determined and intensive efforts to gain control of it. In fact, the day may not be far distant when this affection may have all but disappeared in the United States as a causative factor in blindness.

Another disease that in some areas (though not in all) is becoming a thing of the past as a cause of blindness is trachoma. The question of the control of this disease is largely one of education and sanitation; and with advance in these matters, corresponding advance may be expected in its overcoming.

But with these two diseases the chief grounds for immediate hope are removed. For most of the remaining specific causes of blindness, so far as statistical evidence is available, the situation is much less encouraging. In individual cases that outstanding foe of the human sight, cataract, is being struck at with some degree of success (especially through operations, which are becoming of more frequent occurrence); but as a wide cause of blindness we are able to discern no great improvement over the past. In fact, in all consideration of this affection there will have to be reckoned with the constantly increasing proportion of old persons in the general population, a group in which it falls with particular frequency. Glaucoma, though meeting defeat in certain individual cases, seems also on the whole to be holding its own as a destroying agent of the vision of man. As with cataract, unless further and more powerful means are discovered to check it, an extension of its operations is to be expected with the enlarging older population. Atrophy of the optic nerve still continues as an ominous foe; as yet little sign of general abatement is in evidence. How far venereal disease in general will remain as a factor in the causation of blindness will largely depend upon the degree of control that society proves itself able to secure over it. At the present day there are at any rate unquestionably better facilities available for its study and treatment.²

¹ In 1851 was discovered the ophthalmoscope, which has been of great effect in the examination and treatment of the eye. See Transactions of American Ophthalmological Society, early years.

² In former calculations as to such diseases as atrophy of the optic nerve their possible syphilitic background was insufficiently recognized. One disease, which in part is of gonorrheal origin, ophthalmia neonatorum, is very perceptibly declining, as has been seen.

Perhaps an increase is to be registered for cancer (and other neoplasms) as a cause of blindness; it is quite possible that what is done to the eye by this dread scourge is but symptomatic of its as yet general unconquered hold in the body of man; in the eye it is proving as stubborn to master as it is elsewhere. With such an affection as buphthalmos (somewhat as with glaucoma) there likewise appears an increasingly powerful enemy of the eye. Keratitis would seem on the whole to be stationary, in some areas reporting a gain, and in others a loss. With respect to such diseases as retinitis, choroiditis, conjunctivitis, etc.—each responsible singly for an appreciable if not a large amount of blindness—we are as yet unable to discover wide indications of decrease, though in some quarters this is quite possibly the case. With such affections as progressive myopia it may well be that there is being effected an appreciable increase in blindness or in impaired vision of late years. This may be due to some extent at least to the increased strain placed upon the eye, frequently amounting to actual abuse, especially when that organ is already not functioning properly, or is weak. Possibly not a little of this ill treatment occurs in vehicles of transportation of the present day, the general use of which imposes an added strain upon the eye. Other specific diseases of the eye (if sufficiently reported) have proportions too small to attest serious changes in their movements, whether of increase or of decrease.

With the part played by general diseases in the causation of blindness, we have in the main a situation of no small promise. This is chiefly ascribable to better medical attention or better medical treatment for them, together with better control of health conditions in general. The decreases registered for most general complaints which are responsible for the loss of sight are doubtless merely indications of the general progress being made by medical science in its conquests of physical ills. In other words, most general diseases, with certain exceptions, are succumbing to medical progress; and with the general gains effected are to be included those for the eye.¹ In addition, with wider and better hospital and clinical facilities there are fuller and more effective means of warding off threatened blindness or of dealing with incipient blindness. Together with these considerations are to be mentioned generally improved health conditions among the population as a whole, a direct effect of which is greater protection for the eye. A feature in the situation of special hopefulness lies in the circumstance that with more prompt and more skilled treatment of

¹ Formerly one-third of blindness was said to be due to smallpox. Census Report, "The Blind in the United States: 1910," 1917, p. 99.

cases of imminent loss of eyesight on their occurrence actual blindness may be avoided, or the resulting loss may be reduced, perhaps limited to but one eye.¹

Yet it is not to be thought that the battle against general diseases as causes of blindness is being decisively won, or is being won all along the line. Though most of the diseases occasioning blindness are showing decreases in their mortality rates, a few of them (at least in a few areas) still appear to be serious in their effects in producing blindness, and appear to be able to withstand material reduction. In the case of certain of the general diseases showing an increase or a retarded decrease, an important factor probably lies in the harder and more exacting use of the eye at the present in particular circumstances. So far, also, as there may be in particular an increase in affections of a nervous order or resulting from nervous strain, or in affections of the blood or circulatory system or in affections of the digestive system, there may be corresponding effects in the eye, as yet impossible to measure.²

In certain industries or in certain industrial processes, and in certain non-industrial activities as well, though not in all, there appears to be a decrease in blindness resulting from accidents. So far as this is actually the case, it is in large part due to more or less organized efforts of the present day to prevent accidents and to insure safety. With respect to the eye this has meant insistence upon caution in operations in which there lies danger to the eye, together with the adoption of due safeguards for its protection.³ A matter of particular encouragement consists in the circumstance that because of earlier and more efficacious treatment of injuries to the eye there is less and less peril of eventual loss, or of loss of the second eye. It is evident, nevertheless, that the campaign directed against injuries to the eye has not been successful in reducing all forms of injury or in reducing blindness from accidents in all walks of life or in all areas. With the industrial activities of the country being promoted at a rapid rate, and with the industrial hazards, including those to the eye, falling more

¹ Very practical indication of a belief that blindness among children in particular is not increasing in relation to the general population, but is rather decreasing, is found in the circumstance that in the projection of new plants for the education of blind children, little enlargement of existing facilities is planned, and sometimes even a reduction.

² One reason, it is to be remembered, for the indicated decline in the proportions for general diseases lies in the greater knowledge which we now have regarding the real causes involved, together with increased care in specifying the particular nature of the trouble, and consequently the substituting of more exact for looser terms.

³ So far as there may exist an increase of blindness from accidents in late youth or early adult life, especially in connection with certain industrial operations, this may mean that persons of such age are in relatively larger numbers entering industries having exposure to eye dangers, or that there are an enlarged number of operations possible at that time of life, with consequent increased hazard to the eye.

widely, there is ever increasing danger of blindness therefrom.¹ Over against this industrial growth must be set the constantly broadening efforts to promote safety, both by education and by the installation of proper safeguards. It may even be said that there is a race in the United States between industrial expansion and safety measures, but of the eventual ascendancy of the latter we may not be altogether without hope.

With all the evidence now before us which it is possible to present, we may draw certain deductions regarding our prime question whether blindness is increasing or decreasing. Though what statistics we have with respect to the number of the blind in different years are not of a character to enable us to ascertain with definiteness the movement of blindness, yet these statistics probably on the whole indicate encouraging trends. From those in respect to age and in respect to age at occurrence of blindness it seems hardly to be doubted that the number of the blind in younger life has steadily decreased of late years; and if there is no reason to suspect an increased operation of the causes of blindness among persons in adult life, we have very decided evidence of a diminution in general. With respect to accidents and injuries to the eye, it seems hardly other than likely that, despite all our industrial growth, with the attention now being directed to the prevention of industrial accidents in particular, and with the increasing introduction of safety appliances, there is being effected a gradual reduction in the number of injuries to the eye, and consequently of cases of blindness therefrom—an opinion that perhaps finds support only partially from the statistics which we have, but perhaps no less demonstrably from other well-founded evidence. For that blindness which is ascribed to general diseases, we may believe that there is a rather considerable diminution resulting from more skilled medical treatment and from improved sanitary conditions—a view generally supported by our statistics. For the same reasons we may conclude that some of the local eye diseases which cause loss of sight are being similarly affected. The statistics in respect to certain of these do not, it is true, indicate a perceptible decrease; but in certain others a decided abatement is apparent. In that blindness found to be of hereditary origin, there would seem to be a residuum which may persist for an indefinite period; but with the progress of the science of eugenics, we may hope that eventually there may be brought about some reduction of this form of blindness also. Hence,

¹ With the larger participation of the population in such occupations as manufacturing and mining, eye accidents may be expected to increase. With the need for fewer persons in such occupations, they may be expected to decrease.

viewing the situation in its entirety, we seem justified in affirming a conviction that blindness has within a measurable time shown on the whole a decrease, although this decrease cannot as yet be called a very material one; and that the chances are that in the future this decline will continue, perhaps at an accelerated rate.

CHAPTER VII

ORGANIZED MEASURES FOR PREVENTION OF BLINDNESS

DEVELOPMENT OF INTEREST IN SUBJECT

With respect to the possibilities of the prevention of blindness there remains one further matter to call for attention. This is the organization of special movements for the attainment of such a result. Of so great consequence has the question come to be regarded that we have a conscious gathering of forces in the United States looking to and working for the reduction of blindness to its lowest possible extent, perhaps with its eventual elimination. There is in fact involved one of the most significant as well as one of the most important undertakings of the day for the proper disposal of pressing social problems.

The movement for the prevention of blindness may be said to have had its inception largely in the concern aroused from the prevalence of ophthalmia neonatorum.¹ It was upon this disease in nearly all cases that the primary stress at the outset was laid; in time as a general thing the movement was extended to include other causes.²

To the medical profession is owed the first debt for the lending of thought to the matter of the prevention of blindness.³ Initial action appears to have been taken by the New York Medical Society in 1887 when a committee was appointed to investigate the question of blindness from ophthalmia neonatorum and to make report thereupon. Other medical bodies followed, that with the largest influence being the American Medical Association. From these organizations interest gradually spread to lay organizations. Finally, there were brought into being special bodies with the sole object of devoting consideration to the problem. Attention to the question of the prevention of blindness is now found manifested by the medical and nursing professions, by organizations of a general nature, by organizations particularly concerned with the blind, and by organizations formed expressly for the purpose.⁴

¹ See *Outlook for Blind*, i., 1907, p. 29.

² Reference has been made to the efforts that have in particular been put forth respecting loss of sight from infant blindness, and also from trachoma and from accidents.

³ The first movements in this direction were in London, England.

⁴ On the organized movement for the prevention of blindness, see Proceedings of National Conference of Charities and Correction, 1909, p. 91; Report of United States Com-

ACTIVITIES OF SPECIAL BODIES

The body created for dealing with the problem on a nation-wide scale is that at present known as the National Society for the Prevention of Blindness. Largely as a result of early medical interest, there was established in 1908 in New York State a Committee for the Prevention of Blindness, which was before long placed in conjunction with the New York Association for the Blind. In 1913 connection with the latter body was severed, and the committee became the New York State Committee for the Prevention of Blindness. In 1911 there was organized along similar lines the American Association for the Conservation of Vision. Because of the calls for advice and assistance from various sections of the country, and because of the need generally felt for a body which should be in a position to serve the country as a whole, consolidation was effected in 1915 between these two organizations, with the resultant inauguration of the National Committee for the Prevention of Blindness, having headquarters in New York City. In 1928 the present name was adopted.¹ The stated aims of the Society are as follows:

1. To endeavor to ascertain, through study and investigation, any causes, whether direct or indirect, which may result in blindness or impaired vision.
2. To advocate measures which shall lead to the elimination of such causes.
3. To disseminate knowledge concerning all matters pertaining to the care and use of the eye.²

By this Society is carried on an extensive range of activities for the preservation of the sight. It serves as a clearing house and bureau of information; renders expert advice as may be called for; publishes and distributes literature of various kinds;³ conducts lectures and

missioner of Education, 1912, p. 334; Transactions of American Ophthalmological Society, 1890, p. 540; Russell Sage Foundation, Bulletin, 1910, no. 1, "Organized Work for Prevention of Blindness;" Report of National Society for Prevention of Blindness, 1924, p. 12; *Safety Engineering*, xlv., 1922, p. 204; liv., 1927, p. 148; lvii., 1929, p. 284; *Survey*, xxxiv., 1915, p. 244; *American Journal of Public Health*, vii., 1917, p. 95; *Science*, xiv., 1889, p. 268; xviii., 1891, p. 77; *California State Journal of Medicine*, xv., 1917, p. 213; *Journal of American Medical Association*, xxi., 1893, pp. 207, 813; xxxiii., 1894, p. 579; xxiv., 1895, p. 287; *Chicago Medical Recorder*, xxxvii., 1915, p. 316; *Outlook for Blind*, June, 1924, p. 51; *News Letter*, Dec., 1924; *Sight Saving Review*, Dec., 1931, p. 3; *Archives of Ophthalmology*, xlv., 1915, p. 438.

¹ The Society was incorporated in 1917. In addition to the governing board, composed of physicians and laymen interested in the public welfare, there is an advisory board of specialists. Membership dues and donations are of varying amounts. Grants have been made by the Russell Sage Foundation and the Rockefeller Foundation. Legacies and special gifts amount to over \$150,000.

² On its purposes, see Report of League of Red Cross Societies, "Prevention of Blindness," 1929, p. 68; Social Work Year Book, 1929, pp. 43, 562; *Sight Saving Review*, March, 1931, p. 9; Sept., 1931, p. 17.

³ Included are two periodicals—the *News Letter*, an occasional publication, and the *Sight Saving Review*, a quarterly.

exhibits; seeks to bring knowledge of eye hygiene in popular form to children and adults; plans programs for the safety of the eye in industry and elsewhere; makes special investigations—as to the causation of blindness, as to the use of the eye, and as to the testing of the eye; initiates and fosters sight-saving classes in different parts of the country; ¹ promotes to some degree the training of medical social eye workers; ² initiates and assists in local campaigns for the prevention of blindness; promotes desirable legislation with respect to the prevention of blindness; is concerned with the work of ophthalmologists and health authorities in attention to sufferers from eye complaints; and coöperates with various national, State, and local organizations in possible measures for the prevention of blindness.³

In certain individual States there have been formed special societies or associations for the prevention of blindness.⁴ Such have existed in New York, Maryland, Kentucky, Illinois, California, and Louisiana. By these organizations educational campaigns have been conducted, treatment secured for incipient cases of blindness, and other beneficial service rendered.⁵

ACTIVITIES OF GENERAL BODIES

Among organizations concerned with the interests of the blind in general there is full recognition of the import of the movement for the prevention of blindness. With associations, particularly the larger ones, the prevention of blindness is often a foremost aim. To public commissions work in this direction is often entrusted as a specific duty. By both these bodies no small results have been accomplished, some of them even employing special nurses or conducting special

¹ The matter of sight-saving classes is considered in Chapter V.

² These are trained in certain larger hospitals and dispensaries, and are at work in some of the larger cities. In 1930 there was created a committee on medical social eye workers. See *Sight Saving Review*, June, 1931, p. 48; June, 1932, p. 83; March, 1933, p. 46; *Hospital Social Service*, xxi., 1930, p. 471; *Journal of American Medical Association*, xcvi., 1932, pp. 83, 394; Committee of Medical Social Eye Workers, Bulletin, no. 6, 1933 ("Problems of Worker Assigned to Part Time Service with Eye Patients"); Transactions of Section on Ophthalmology of American Medical Association, 1931, p. 291.

³ The Society has had a large part in international movements for the prevention of blindness. See Report of League of Red Cross societies, "Prevention of Blindness," 1929, p. 93.

⁴ An organization formerly concerned with the conservation of vision was the Eye Sight Conservation Council of America, formed in 1920, with headquarters in Washington. It aimed to arouse public interest in the matter, and has conducted educational campaigns. It was particularly interested in the prevention of industrial accidents to the eye, in lighting arrangements, and in the care of the eyes of school children. See *Science*, lvii., 1923, p. 376; *School and Society*, xxxiii., 1931, p. 297; Proceedings of American Association of Workers for Blind, 1927, p. 130.

⁵ In 1929 was organized the International Association for the Prevention of Blindness, with headquarters in Paris. There are also certain international organizations with respect to some of the diseases that cause blindness. In the League of Nations there are several agencies concerned in greater or less degree with the prevention of blindness.

clinics to render their efforts the more effective.¹ The special schools for the blind, too, are having a part in the undertaking, their greatest service perhaps being in the dissemination of literature and in the giving of advice to parents, with now and then the conducting of a clinic.²

The interest of medical bodies in the saving of sight is now a rather pronounced one. In the American Medical Association there is a Bureau of Health and Public Instruction,³ which by publications and otherwise seeks to acquaint the profession and the general public with the matter, in part under the direction of the Section of Ophthalmology.⁴ In a number of the State medical societies there are special committees (often consisting of an ophthalmologist, obstetrician, and a public health officer), with now and then local committees. With the American Ophthalmological Society, the American Academy of Ophthalmology and Oto-Laryngology, and like bodies there has been similar concern. To be mentioned also is the Joint Committee on Health Problems of the American Medical Association and the National Education Association. On the part of public health officials, State and local, and including the United States Public Health Service, the saving of sight is receiving increasing consideration.⁵ Particularly interested in promoting legislation for the protection of the sight and in securing its enforcement is the Standing Committee on the Conservation of Vision of the Conference of State and Provincial Health Authorities of North America. Among nursing bodies larger attention is being devoted to the preservation of sight, particularly of the newborn, the National Organization for Public Health Nursing having a special committee on the subject. Other more or less similar organizations which are interested are the American Child Health Association, the American Association of Hospital Social Workers, the American Public Health Association, the American Social Hygiene Association, and the American National Red Cross.⁶ Hospitals, both general and

¹ On this work, see *Sight Saving Review*, Sept., 1931, p. 43; Sept., 1933, p. 186; *Journal of American Medical Association*, xcvi, 1932, p. 394; Proceedings of National Society for Prevention of Blindness, 1926, pp. 29-52; 1929, pp. 3-48; M. J. Davis and M. C. Jarrett, "Health Inventory of New York," 1930, ch. 17; Report of Massachusetts Commission for Blind, 1915, p. 65; Social Work Year Book, 1933, p. 46.

² See Proceedings of American Association of Instructors of Blind, 1932, p. 742.

³ There has been a subcommittee of this section known as the Committee on the Conservation of Vision. Also concerned are the American Association of Industrial Physicians and Surgeons and the American Association of School Physicians.

⁴ In medical periodicals frequent notice is given of the subject.

⁵ Special mention is to be made of the activities of the United States Public Health Service with respect to the prevention of blindness from certain diseases, especially trachoma and venereal diseases.

⁶ On efforts to deal with eye sufferers from the explosion in Halifax, Nova Scotia, in 1917, see *News Letter*, Feb., April, 1918; *Outlook for Blind*, xi., 1918, p. 77; *Survey*, xxxix., 1918, p. 675; *Simmons Quarterly*, Feb., 1918; *American Journal of Ophthalmology*, i. (n. s.), 1918, p. 223; Proceedings of American Association of Instructors of Blind, 1918, p. 55.

special, and notably eye clinics or infirmaries of large cities, are likewise alive to the situation, attaching more and more importance to follow-up work.

There is also enlarging concern in the prevention of blindness, or in the conservation of vision, on the part of certain general organizations. This is in considerable measure the outgrowth of the present movement for the prevention of accidents, or "safety first," which in itself constitutes one of the most hopeful signs in the situation. The aim is largely an educational one, or to awaken the public to a realization of the dangers likely to be met with, and to instill a spirit of caution, the campaign being carried on by means of leaflets and posters, lectures and exhibits, and notices in the public press. In all undertakings of the kind no small share of attention is bestowed upon the risks to which the eyes are exposed, and upon the need of their proper care and use. The movement receives added strength from the creation of such bodies as the National Safety Council, with local organizations in different States and cities, and which prepares literature on the subject; the American Museum of Safety, which offers annual awards for outstanding accomplishments in accident prevention, maintains safety exhibitions, and carries on other educational activities; the American Society of Safety Engineers, which seeks to secure professional standards; the Conference Board on Safety and Sanitation, representing the National Founders' Association, the National Association of Manufacturers, and the National Metal Trades Association, which engages in educational work of different kinds; and certain other trade associations, which are similarly concerned. In New York City there has been established the Safety Institute of America, which has various devices for protection against eye accidents. By a number of industrial establishments, either in conjunction with the organized movements, or independently of them, efforts are being put forth on an enlarging scale to warn employees of perils. By some insurance companies campaigns are conducted to inculcate lessons of prudence. By certain public agencies, especially State departments relating to labor, and most of all by industrial accident boards, the matter of the prevention of injuries in industry is being given greater and greater stress.¹

Finally, apart from the matter of the prevention of accidents to the eye, there has been stimulated a concern in the conservation of vision as a whole in other general organizations.² In such bodies as

¹ By several of the agencies enumerated, both special agencies for the blind and general agencies, "museums of safety" are maintained, to show devices for the protection of the sight.

² Mention is to be made of provision for research, sometimes endowed, with respect to

the National Education Association, the National Congress of Parent-Teachers, the American Federation of Labor, the Illuminating Engineering Society, and other organizations there have been created special departments or committees on the subject. Such is the case also among some civic organizations, fraternal bodies, service clubs, welfare leagues, and women's clubs, possibly as a specific part of their programs. By public authorities also, especially those having to do with education or with the care of children, increased attention is being devoted to the movement.¹

the causation of blindness. By the Commonwealth Fund the sum of \$250,000 was donated in 1929 for efforts for the eradication of trachoma.

¹ In Kentucky in 1915 planks were inserted in the platforms of the leading political parties, favoring measures for the prevention of blindness from trachoma.

PART II

GENERAL CONDITION OF BLIND

CHAPTER VIII

DEFINITION OF BLINDNESS

Blindness is to be regarded as of not a few degrees, varying all the way from a condition where the want of sight is absolute or total, to a condition where the sense of vision, while so impaired as to be of little actual use, does exist in some slight measure. It may thus include, on the one hand, a state in which not even the perception of light is conveyed to the brain, and, on the other hand, different stages of diminished eyesight, or "partial" blindness, the more severe of which constitute a handicap hardly less than full blindness, and the less severe embrace an appreciable remnant of vision (perhaps merely an advanced stage of impaired vision).¹

A definition of blindness limited to complete or absolute want of functioning of the organ of vision would, at least for practical purposes, fail to meet the needs of those not able to make adequate or helpful use of it. To a large extent with adults the primary and fundamental consideration is the degree to which their eye infirmity operates as a barrier to economic endeavor, or in the earning of a livelihood—or what may be called "industrial" or "economic" blindness. With children the test may lie in inability to receive an education in the ordinary schools for children with sight, or in the use of raised print as the necessary means for reading—or "educational" blindness.

Ophthalmologically speaking, or in terms of "medical" blindness, the extent of vision (visual efficiency) is to be regarded as depending chiefly upon three factors: visual acuity, field of vision, and muscular control.² The degree of vision is the product or the combination of

¹ An exact or a hard and fast definition of blindness is, practically speaking, not altogether desirable, even though the way may be left open to some uncertainty in particular cases. This is especially true with respect to the making of proper provision for the material care of the blind, where a certain breadth or elasticity may at times be necessary. Much may depend upon particular needs, or upon the standards called for in particular situations. In no case, however, should the definition of blindness be so wide as to admit of unfair advantages to any.

² Central visual acuity has relation to the ability to see clearly the size, form, and color of objects which are in the direct line of vision of the eye. The field of vision includes both the area of direct vision and an area around it of less sensitive vision, called peripheral or indirect vision, which is useful in giving a visual consciousness of moving or stationary objects not in the direct line of vision. Muscular control has reference to the muscles which move the eyeballs, the fields of vision of the two eyes being largely overlapping; when these function in unison, the images seen by the two eyes are fused into a single

the measures of these factors. (There is some disagreement as to the relative weight of each.) The amount of vision (central visual acuity) in a given case is technically stated in the form of a fraction (though it is not such mathematically).¹

For practical purposes, definitions of blindness² which have been employed are: inability to see to read printed matter, even with the aid of glasses (if one has learned to read); to perceive large objects close at hand; to designate form or color; to count the fingers upon one hand within one foot (or perhaps within three feet) from the eye; to recognize the human face; to make out very large print without great difficulty; to engage in occupations requiring vision; or to be in possession of visual acuity of not less than one-tenth.³ (Reference is always to the better eye, after correction with glasses if necessary.)

In general, then, one may be considered to be blind in whom sight either is entirely wanting, or is so slight as to be of no substantial utility or of small material service, or one in whom there exists little or no visual perception, or one who even with the help of eye-glasses or with other artificial recourse has not sufficient ocular power for the ordinary affairs of life, or, in particular, for the performance of tasks for which eyesight is essential.⁴

image, with the obtaining of a perception of depth and distance. Only less important factors may be regarded as depth perception, fusion sense, stereoptic vision, color perception, adaptation to light and dark, and accommodation.

¹ In the usual scales the "numerator" indicates the distance (expressed in feet or meters) at which a series of letters of graduated size (on a test chart) is actually seen, and the "denominator" the distance at which the same series should be seen with normal vision. In most tests adopted the "numerator" is 20. According to the table prepared by the Section on Ophthalmology of the American Medical Association (by the "Snellen" test), 20/20 represents perfect vision, 20/40 a loss of approximately 15 per cent in visual efficiency, 20/70 a loss of approximately 35 per cent, 20/100 a loss of approximately 50 per cent, 20/200 a loss of approximately 80 per cent, and 20/800 a loss of practically 100 per cent. In other tables the amount of vision is represented by figures slightly different. See in particular Transactions of Section on Ophthalmology of American Medical Association, 1927, p. 370.

² A person blind in but one eye is not to be regarded as blind at all—though such a person is always in much greater danger of becoming so than is a person with two good eyes. There are many persons whose vision lies in a single eye. In one Federal census (1890) special attempt was made to enumerate such persons.

³ Vision consists of "ability to perceive, distinguish, and recognize objects. . . . If the ability is so far destroyed that what remains will not to a practical or useful extent confer any benefit, entire sight . . . is lost. *Murray v. Aetna Insurance Co.*, 243 Fed., 285 (1916). See also *Turpin v. St. Regis Paper Co.*, 192 N. Y. Supp., 85, 199 App. D., 64, 233 N. Y., 536, 135 N. E., 907 (1921); *Struble v. Vacuum Oil Co.*, 206 N. Y. Supp. 176, 210 App. D., 344 (1924); *Prsekop v. Ramapo Ajax Corp.*, 212 N. Y. Supp., 426, 214 App. D., 512 (1925); *De Caprio v. General Electric Co.*, 218 N. Y. Supp., 213, 218 App. D., 310, 244 N. Y., 500, 155 N. E., 756 (1927); *Gainey v. Warren-Nash Motor Corp.*, 245 N. Y. Supp., 371, 231 App. D., 768 (1930); *Arnold v. S. R. Mfg. Co.*, 203 N. Y. Supp., 546, 208 App. D., 305 (1924). See, in addition, Chapters XLVII, L-LII.

⁴ Persons blind or nearly so may be regarded as composed of the following classes: (1) those totally blind or having light perception only (0 to 2/200); (2) those having perception of form or motion, at a distance of not over 3 feet (2/200 to 5/200); (3) those having "traveling sight," or able to count the fingers at a distance of 3 feet (5/200 to 10/200);

Of persons known as "blind," the proportion designated as "totally" so ranges in different accounts from less than one-half to two-thirds. The remainder have "partial" blindness. As many as one-sixth or one-fifth are at times described as in possession of "useful vision." The proportions reported as having various degrees of vision vary widely.¹

(4) those able to read large headlines (10/200 to 20/200); and (5) border-line cases, with vision insufficient for ordinary affairs requiring eyesight (20/200 or over, with ability to read 14-point type, but not 10-point unless in case of some defect of vision). Committee on Statistics of the Blind (sponsored by the American Foundation for the Blind and the National Society for the Prevention of Blindness). There is also a committee on definition of blindness under the auspices of the American Association of Instructors of the Blind and of the American Association of Workers for the Blind. See *Outlook for Blind*, xxv., 1931, p. 161; Proceedings of American Association of Workers for Blind, 1931, p. 35.

¹In one Federal census (1900) the percentage of the blind stated to be totally so was 55.0; by the New York State Commission for the blind (1906), 64.9; by the Ohio Commission (1908), 47.5; by the Minnesota Board of Control (1924), 53.0; and by the California Department of Public Welfare (1926), 60.0. Of the blind in Massachusetts 50.7 per cent are totally blind; 34.2 per cent, partially; and 15.1 per cent, with "seriously defective vision." Report of Massachusetts Commission for Blind, 1919, p. 14; *Outlook for Blind*, xlii., 1920, p. 112. Of the blind in Connecticut 33.6 per cent are totally so, 21.0 per cent are able to perceive objects, 22.6 per cent have "traveling sight," and 22.8 per cent have vision of over one-tenth. Report of Connecticut Board of Education of Blind, 1930, pp. 32, 116. Of the male blind in Minnesota 50.4 per cent are totally so, 25.0 per cent are able to see light, 7.6 per cent are able to distinguish color, and 17.0 per cent are able to read large print. The respective percentages for females are 43.4, 31.3, 5.3, and 20.0. Report of Minnesota Commission for Blind, 1923, p. 115. Of persons blinded in the World War 51 per cent were totally blind, 28 per cent had less than one-tenth of normal vision, and 21 per cent from one-tenth to one-fifth. Report of Pennsylvania Institution, 1920. Among applicants for pensions in Missouri 51.6 per cent have vision from 0 to light perception; 27.9 per cent, from light perception to 10/450; and 17.2 per cent, from 10/450 to 20/450 (unknown, 3.3 per cent). *Journal of Missouri State Medical Association*, xxiii., 1926, p. 179. See also *ibid.*, xxv., p. 101; *Archives of Ophthalmology*, lvi., 1927, p. 472. Of pupils in the New York State School 28.7 per cent are totally blind, 27.1 per cent have light perception, 30.8 per cent can count fingers, and 13.4 per cent can read from a Snellen chart. *School and Society*, xix., 1924, p. 47. See also Report of Illinois School, 1914, p. 18; 1916, p. 23; Report of Tennessee School, 1914, p. 18; *Illinois Medical Journal*, xxvi., 1914, p. 187. Of pupils discharged from the Pennsylvania Institution from 1907 to 1922, the percentage of males totally blind was 61.9, having vision of less than 2/60 13.5 and from 2/60 to 6/60 24.7. The respective percentages for females were 52.2, 23.5, and 24.3. Among those under five years of age the respective percentages for males were 57.7, 14.6, and 27.7, and for females 57.6, 22.9, and 19.5; among those from five to thirteen, for males 67.4, 13.5, and 19.0, and for females 38.7, 22.6, and 38.7; and among those over thirteen, for males 77.7, 16.8, and 5.5, and for females 0.0, 50.0, and 50.0. Publications of Pennsylvania Institution, no. 3, June, 1924, p. 8 ("What Can the Blind Do?"). Of pupils in schools for the blind in general 16.0 per cent are able to read ink print, 23.4 per cent have less vision, and 60.6 per cent have light perception only or are totally blind. White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 65. See also *Boston Medical and Surgical Journal*, clxxvi., 1917, p. 803; California Department of Social Welfare, "The Adult Blind in California," 1928, p. 6.

NOTE TO CHAPTER VIII.—On definitions of blindness, see *British Medical Journal*, 1926, i., p. 907; *Journal of Missouri State Medical Association*, xix., 1922, p. 346; *Canadian Medical Association Journal*, xvi., 1926, p. 1122; *Illinois Medical Journal*, xxi., 1912, p. 399; xxvi., 1914, p. 187; *Journal of American Medical Association*, lv., 1910, p. 303; lxxv., 1925, p. 1367; *Colorado Medicine*, xxiii., 1926, p. 84; *American Journal of Ophthalmology*, xiv., 1931, p. 98; *Annals of American Academy of Political and Social Science*, xxvii., 1911, p. 273; *Journal of American Statistical Association*, xxvii., 1932, p. 47; *Outlook for Blind*, ix., 1915, p. 56; Proceedings of Section of Ophthalmology of Royal Society of Med-

icine 1915, pp. 35, 49, 52; Transactions of International Congress on School Hygiene, 1907, p. 820; Proceedings of American Association of Workers for Blind, 1929, p. 181; Bulletin of Ohio Board of Charities and Correction, xv., 1909, 1, Feb., p. 30; Report of Massachusetts Commission for Blind, 1909, p. 25; League of Nations Health Organization, Report on Welfare of Blind, 1929, p. 16; Report of League of Red Cross Societies, "Prevention of Blindness," 1929, p. 13.

CHAPTER IX

NUMBER OF BLIND IN UNITED STATES

REPORTED AND ESTIMATED NUMBER

According to the returns of the Federal census¹ for 1930,² there were in the United States in this year 63,489 blind persons. This is equivalent to a ratio of 517 blind persons to every 1,000,000 of the population of the country at large.³ There is thus 1 blind person to every 1933 persons in the general population.⁴

The making of a full and accurate enumeration of the blind is not an easy matter.⁵ This is for several reasons—difficulty in formulating an exact or proper definition of blindness (especially as to those too young to read or those who are illiterate); failure to discover all blind persons; inclusion of a certain number not actually blind; reluctance in certain instances to state actual condition of blindness; question of border-line cases, often to be included more or less at the judgment of enumerators (including cases of gradual approach, and cases with possible exaggeration of defect of vision). According to enumerations made in certain individual States, a larger number of blind persons are as a rule reported than in the census returns.⁶ The proportions

¹ The blind have been enumerated at every decennial census since 1830. From 1880 to 1920 special schedules were prepared (those from 1900 to 1920 being filled out by the blind themselves or by their friends, giving additional particulars as to their blindness). In 1920, of the blind enumerated 77.8 per cent returned special schedules. There were 82.1 per cent found by census enumerators, and 17.9 reported by agencies for the blind. In 1910 there were special schedules returned by 51.1 per cent. A small proportion of the blind originally enumerated are on later investigation not located.

² Census Bureau, "The Blind and Deaf-Mutes in the United States; 1930," 1931. See also "The Blind in the United States: 1920," 1923; "The Blind Population of the United States: 1920," 1928; "The Blind in the United States: 1910," 1917; "The Blind Population of the United States: 1910," 1915. See U. S. Stat., 1906, ch. 3048; 1909, ch. 2; 1910, ch. 63; 1919, ch. 97; 60th Cong., 2nd sess., 1909, H. R. Report 1964. An annual census of all the "defective" classes is now planned.

³ The definition was inability to read, even with the aid of glasses. (Children in special schools for the blind were generally included.)

⁴ The ratio of the blind to general population is somewhat less for the United States than for most countries of the world. This is largely to be attributed to the relatively smaller number of old people living in it, and to the general effects of immigration. On the number of the blind in different countries, see Report of Census Bureau—"The Blind in United States: 1910," 1918; Report of National Society for Prevention of Blindness, 1919, p. 40; Report of League of Red Cross Societies, 1929, pp. 16, 64; League of Nations Health Organization, Report on Welfare of Blind, 1929, pp. 20, 91; *Outlook for Blind*, June, 1928, p. 11.

⁵ There would be great gains in the statistical treatment of the blind if a registration could be kept of all cases, especially of new cases of blindness occurring each year.

⁶ In New York the census figures constitute 57.0 per cent of the number discovered

vary widely,¹ but in general the census figures may be said to constitute from three-fifths or two-thirds of the numbers found in the several States.² On this basis the total number of the blind in the United States ranges from 95,000 to 105,000—or in round numbers about 100,000. The ratio of the blind per 1,000,000 of general population then becomes about 801, with 1 blind person for about every 1227 persons in it.³

NUMBER IN DIFFERENT GEOGRAPHIC DIVISIONS AND STATES

In the following table is given the number of blind persons in the several geographic divisions and in the several States of the United States, together with the ratio of the blind per 1,000,000 of general population (1930).

The ratios found in the several divisions and in the several States vary considerably. In the order of the ratio of the blind to general population, the several divisions rank as follows: West North Central, Mountain, East South Central, East North Central, South Atlantic, West South Central, New England, Pacific, Middle Atlantic. In-

through local investigation; in New Jersey, 65.1 per cent; in Pennsylvania, 70.2 per cent; in Indiana, 98.7 per cent; in Ohio, 58.4 per cent; in Minnesota, 57.9 per cent; in Iowa, 132.5 per cent; in Connecticut, 32.4 per cent; in Massachusetts, 43.9 per cent; in Wisconsin, 67.8 per cent; and in Missouri, 59.1 per cent. See in particular Report of New York Commission for Blind, 1921, p. 6; *Message to Sightless* (New York), July, 1921; Report of Indiana Board of Industrial Aid for Blind, 1926; *Journal of American Medical Association*, lxxxii., 1924, p. 815. In Missouri the ratio of the blind between different counties varies from 213 to 1831. Meyer Wiener and A. M. Hayden, "Study of Blind Pension Roll in Missouri," 1927. See also Report of New York Commission for Blind, 1906, pp. 15, 26; Report of National Committee for Prevention of Blindness, 1921, p. 27. On the increased numbers of the blind in Connecticut after a special investigation, see Report of Connecticut Board of Education of Blind, 1930, p. 111.

¹ Differences between local State investigations and census enumerations are doubtless in part due to longer periods of time for the former investigations, to wider acquaintance and a fuller coöperation on the part of neighbors, and to less fixed or standardized definitions of blindness (often including more liberal conceptions). The fullest representations are found where the most intensive work for the blind is carried on.

² From the number of the blind persons enumerated in special investigations in certain States the population of which combined constitutes approximately one-half of the total population of the United States, the number of the blind for the entire country has been estimated to be 113,152. See *Outlook for Blind*, June, 1928, p. 11; March, 1930, p. 45; White House Conference on Child Health and Protection; "The Handicapped and Gifted," 1931, p. 243; "The Handicapped Child," 1933, p. 46.

³ In a few States local officials are required to make returns to State authorities of all blind persons discovered—usually together with deaf-mutes, insane, and other classes—possibly with report as to their general condition. In those States which have had State census enumerations special report is occasionally made of the blind. In a number of States it is made the duty of certain officials, especially county assessors, local school boards, and the like, to enumerate blind children (and perhaps other children as well), chiefly for educational purposes. This requirement, however, is not extensively observed. In Wisconsin report is made as to the extent of education, relationship of parents, etc. Laws, 1907, p. 1290; Statutes, 1931, § 68.08. See also Laws of West Virginia, 1870, ch. 116; Code, 1931, p. 932. In Michigan a law of this nature has been repealed. Laws, 1848, p. 246; 1875, no. 52; 1925, no. 270; Comp. Laws, 1871, § 1083; 1925, §§ 5638-5640.

NUMBER OF BLIND

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NUMBER AND RATIO OF BLIND BY GEOGRAPHIC DIVISIONS AND STATES

DIVISION AND STATE	NUM- BER	RATIO PER 1,000,000 OF GEN- ERAL POPULA- TION	DIVISION AND STATE	NUM- BER	RATIO PER 1,000,000 OF GEN- ERAL POPULA- TION
UNITED STATES.	63,489	517	WEST NORTH CENTRAL:		
GEOGRAPHIC DIVISIONS:			Nebraska.....	552	401
New England.....	3,952	484	Kansas.....	1,246	662
Middle Atlantic.....	10,013	381	SOUTH ATLANTIC:		
East North Central..	14,120	558	Delaware.....	101	424
West North Central..	8,751	658	Maryland.....	799	490
South Atlantic.....	8,226	521	District of Columbia.	157	322
East South Central..	6,053	612	Virginia.....	1,405	580
West South Central..	6,126	503	West Virginia.....	814	471
Mountain.....	2,363	638	North Carolina.....	1,318	416
Pacific.....	3,885	474	South Carolina.....	1,028	591
NEW ENGLAND:			Georgia.....	1,788	615
Maine.....	626	785	Florida.....	816	556
New Hampshire.....	251	539	EAST SOUTH CENTRAL:		
Vermont.....	223	620	Kentucky.....	1,977	756
Massachusetts.....	1,924	453	Tennessee.....	1,540	589
Rhode Island.....	347	505	Alabama.....	1,415	535
Connecticut.....	581	362	Mississippi.....	1,121	558
MIDDLE ATLANTIC:			WEST SOUTH CENTRAL:		
New York.....	4,418	351	Arkansas.....	1,101	594
New Jersey.....	1,222	302	Louisiana.....	1,252	506
Pennsylvania.....	4,373	454	Oklahoma.....	1,167	487
EAST NORTH CENTRAL:			Texas.....	2,606	447
Ohio.....	4,154	625	MOUNTAIN:		
Indiana.....	2,204	681	Montana.....	235	437
Illinois.....	4,490	588	Idaho.....	156	351
Michigan.....	1,742	360	Wyoming.....	53	235
Wisconsin.....	1,530	521	Colorado.....	751	725
WEST NORTH CENTRAL:			New Mexico.....	607	1,434
Minnesota.....	1,049	409	Arizona.....	259	595
Iowa.....	1,577	638	Utah.....	238	469
Missouri.....	3,879	1060	Nevada.....	64	703
North Dakota.....	195	286	PACIFIC:		
South Dakota.....	253	365	Washington.....	792	507
			Oregon.....	496	520
			California.....	2,597	457

dividual States with the highest ratios are: New Mexico, Missouri, Maine, Kentucky, Colorado, Nevada, Indiana, Kansas, Iowa, Ohio, Vermont, Georgia. The States with the lowest ratios are: Wyoming, North Dakota, New Jersey, District of Columbia, New York, Idaho, Michigan, Connecticut, South Dakota.

The largest proportions of the blind seem to be in the Southeastern part of the country, in a few States in the far Southwest, in a few States in the extreme Northeast, and in certain of the Middle States from the Lakes to the Gulf. The smallest proportions are spread over a vast area of the Northwest, embracing a wide expanse west of the

Missouri River and south of the Canadian border, and over several of the Central Atlantic States.¹

On the whole blind people seem to be widely distributed over the United States, for the most part with relatively little concentration geographically. There are few regions where blindness obtains to an excessive degree, and none that is wholly free from it.

To what the variations in the proportion of the blind in different States are to be ascribed, we know only in part. (Always to be kept in mind is the possibility that enumerations may have been made with greater thoroughness or with greater accuracy in some parts of the country than in others.) The theory that there might be peculiar pathological or other conditions existing on an appreciable scale in different sections of the country to produce blindness is largely negatived by the circumstance that between different contiguous States there are sometimes wide variations. In considerable measure the large proportions of the blind in the Eastern part of the country are to be accounted for by the large proportions of old people here, upon whom blindness, as we are to see later, is peculiarly wont to fall. Certain areas, especially in the North and East, are doubtless affected by the large proportions in them of the foreign born, among whom, because of their relatively greater exposure to industrial accidents, including accidents to the eye, blindness prevails to a relatively greater extent. In certain areas, also, high ratios may be due to manufacturing operations in general, which occasion blindness through some industrial process, and even more to mining operations, which always levy a severe toll upon the eyesight. Because of the large Negro population in the South, with which blindness occurs more frequently than with the white race, a ratio above the average may be expected in this part of the country. The comparatively low ratios in the Western portions are probably due in some part to the circumstance that their population is made up largely of newcomers, with comparatively vigorous physique, among whom blind persons would naturally be found to a smaller extent than among inhabitants of the more settled regions. Probably, also, the ratios in the West would be even less but for their Indian population, among which blindness of certain forms, especially from the disease known as trachoma, is relatively very common. The excessive proportions in the Southwest are attributable to the large number of Mexican origin there, who are very susceptible to blindness from certain affections, especially trachoma and smallpox. In some areas, particularly in the Southeastern, Southwestern, and Middle Western parts of the country, no small

¹ This situation mainly prevails as well for 1920.

portion of blindness is directly traceable to trachoma. In various localities other disorders of the eye may be responsible for a definite amount of blindness. In some degree general climatic conditions doubtless have influence in the matter.

Upon the extent of blindness in different parts of the country urban concentration of population is not without bearing. On the one hand, persons living in such centers are more liable to blindness from accidents, especially such as are occasioned in industry, and possibly also to blindness from certain diseases. At the same time, because of the location here of special institutions for the blind, such as homes, workshops, or schools, or for some other reason, there may have been a conscious congregating or gathering of the blind in urban centers. On the other hand, the relatively smaller number of the aged in large cities, a group from which no small proportion of the blind is recruited, may serve to reduce the number of the sightless here. In addition, there are generally in cities better and fuller facilities for the treatment of eye complaints, and thus for the checking of possible blindness.¹

¹ Of pupils in the Missouri school for the blind the number per 100,000 of general population for different communities is as follows: over 100,000, 12; from 5000 to 100,000, 19; from 100 to 5000, 34; and 100 or less, 5. *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101. On the distribution of the blind in the State of Minnesota, see Report of Minnesota Board of Control, 1924, p. 38; 1926, p. 41. In Table XVI in Appendix A is given for the several geographic divisions of the United States the ratio of the blind per 1,000,000 of general population, according to size of the community or place of habitation (100,000 or over, from 25,000 to 100,000, and smaller places) (1910). In Table XVII is given for the years 1880, 1890, and 1910 the ratio for the United States as a whole according to size of community (places of over 100,000, from 50,000 to 100,000, and places of smaller size). The ratio for cities of the largest size is 493, for those of the next largest 518, and for the smaller areas 678. The blind seem thus proportionately to be considerably more numerous in the smaller cities and towns and the rural sections than in the larger cities, or in areas where population is less dense. Between the two classes of larger cities there seems to be no great difference in the ratios. Among specific affections causing blindness, venereal diseases are generally believed to prevail more extensively in cities. See *Journal of Social Hygiene*, xvii., 1931, p. 155. Such seems also the case with respect to glaucoma. Trachoma, on the other hand, is to be regarded for the most part as a rural disorder. In Missouri it has been found that glaucoma, atrophy of the optic nerve, uveitis, and corneal ulceration are notably more frequent in the largest cities than in the rest of the State. Trachoma is far more frequent, and cataract somewhat more frequent, in the latter areas than in the former. See *Journal of Missouri State Medical Association*, xxiii., 1926, p. 179; *Archives of Ophthalmology*, lvi, 1927, p. 470; Meyer Wiener and A. M. Hayden, *op. cit.* See also *Journal of American Medical Association*, lxxix., 1922, p. 1305; *American Journal of Ophthalmology*, xv., 1898, p. 289; Transactions of American Ophthalmological Society, 1898, p. 259. Cities with a population of over 50,000 may generally be expected to have exclusive eye specialists; cities of from 10,000 or 20,000 to 50,000, rather specialists in the eye, ear, nose, and throat; and smaller communities, only general medical practitioners.

NOTE TO CHAPTER IX.—On the number of the blind in the United States, see *Journal of American Medical Association*, xiii., 1889, p. 409; lv., 1910, p. 303; lxv., 1915, p. 868; lxxxii., 1924, p. 885; *Maryland Medical Journal*, xxv., 1891, p. 23; *Northwest Medicine*, xv., 1916, p. 87; *Edinburgh Medical Journal*, xl., 1894, p. 25; *American Journal of Public Health*, vii., 1914, p. 504; *Journal of Statistical Society* (England), lxxix., 1916, p. 99; Na-

tional Magazine, xiv., 1863, p. 14; *Social Science Review*, *passim*; *Survey*, xvi., 1906, p. 450; xlii., 1919, p. 708; *Outlook for Blind*, xxv., 1931, p. 161; *Journal of American Statistical Association*, xxvii., 1932, p. 47; Report of Massachusetts Board of Education, 1900, p. 510; Report of Massachusetts Bureau of Labor Statistics, 1877, p. 159; Sept., 1906; Report of Massachusetts Commission for Blind, 1907, p. 7; Report of Pennsylvania Commission for Blind, 1925, p. 11; Transactions of Medical Society of State of New York, 1838, p. 44; Proceedings of American Association of Workers for Blind, 1931, p. 35; Jewish Encyclopedia, 1907, iii., p. 249.

CHAPTER X

THE BLIND BY SEX

In the following table are given for the United States and for the several geographic divisions the ratio of blind males and females per 1,000,000 of the general population, and the ratio of males per 100 females among the blind and in the general population (1920 and 1930).¹

RATIO OF MALE BLIND TO FEMALE ACCORDING TO GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION	1920				1930			
	RATIO PER 1,000,000 OF GENERAL POPULATION		RATIO OF MALES PER 100 FEMALES		RATIO PER 1,000,000 OF GENERAL POPULATION		RATIO OF MALES PER 100 FEMALES	
	<i>Male</i>	<i>Female</i>	<i>Blind</i>	<i>General Popu- lation</i>	<i>Male</i>	<i>Female</i>	<i>Blind</i>	<i>General Popu- lation</i>
United States	560	432	134.6	104.0	588	444	135.7	102.5
New England.....	700	571	120.8	98.5	525	439	115.6	97.2
Middle Atlantic....	469	372	127.7	101.4	436	332	131.8	100.9
East North Central..	631	505	132.2	105.7	627	488	134.1	104.1
West North Central	546	424	136.7	106.1	736	569	150.0	104.2
South Atlantic.....	550	407	136.8	101.2	608	431	141.1	99.6
East South Central..	649	459	143.0	101.1	710	526	134.6	100.2
West South Central	465	364	135.1	105.8	565	432	133.8	103.3
Mountain.....	653	476	158.6	115.7	718	528	152.5	111.3
Pacific.....	489	348	160.0	113.9	581	385	153.6	108.7

Of blind persons in the United States 57.5 per cent are males and 42.5 per cent females. In the general population the respective percentages are 50.6 and 49.4. For every 1,000,000 males in the general population 588 are blind, and for every 1,000,000 females 444. For every 100 females among the blind there are 135.7 males, and in the general population 102.5—an excess for the blind of 33.2. (If the general population were equally divided as to sex, the ratio for the blind would be 132.4.)

There is thus a considerably larger proportion of males among the blind than in the population at large. The reason for this excess proportion among the blind we may know only in part. In some

¹ Sources of statistics are the same as those in preceding chapter.

measure it is ascribable to the greater liability or exposure of males to industrial accidents (and in a certain slight measure to the result of wounds occasioned in military operations). Probably another factor is the greater prevalence among males of venereal disease, which directly or indirectly causes frequent loss of sight.

CHAPTER XI

THE BLIND BY RACE AND NATIVITY

PROPORTIONS ACCORDING TO RACE AND NATIVITY IN GENERAL

In the following table is given for the several race and nativity classes the percentage distribution of the blind and of the general population, together with the ratio of the blind per 1,000,000 of the general population for each class (1920 and 1930).¹

PERCENTAGE DISTRIBUTION AND RATIO OF BLIND ACCORDING TO RACE AND NATIVITY

RACE AND NATIVITY	PER CENT DISTRIBUTION				RATIO PER 1,000,000 OF GENERAL POPU- LATION	
	<i>Blind</i>		<i>General Population</i>		1920	1930
	1920	1930	1920	1930		
Total.....	100.0	100.0	100.0	100.0	497	517
White.....	87.0	82.7	89.7	88.7	482	485
Native.....	72.0	....	76.7	....	467	...
Foreign born.....	15.0	....	13.0	....	576	...
Negro.....	12.0	14.3	9.9	9.7	602	767
Mexican.....	....	1.3	....	1.2	...	560
Indian.....	0.9	1.1	0.2	0.3	1996	2064
Other colored.....	0.1	0.6	0.2	0.2	220	687

Blindness prevails proportionately to a greater extent among Negroes than in the population at large, the percentage for the former being about one and one-half times as great as for the latter. An even greater excess of blindness is found proportionately among Indians, with a percentage practically four times as great. Among Mexicans blindness exists to a slightly greater extent than in the general population. Among other colored (mostly Orientals) it seems considerably more pronounced. With whites there is relatively less blindness. Among foreign-born whites it is slightly more prevalent than among native.²

¹ Sources of statistics as before. Certain adjustments are made for 1920.

² Of the foreign-born blind in the United States (1910) 26.7 per cent are from Germany, 23.1 per cent from Ireland, 11.3 per cent from England and Wales, and 9.8 per cent from Canada and Newfoundland—or 70.8 per cent from these four countries. This is mainly the result of the older immigration to the United States, in which these countries were so largely represented, with now a relatively larger number of persons in advanced years among them, and consequently a larger amount of blindness to be expected among them. The proportion born in no other country is in excess of 4.0 per cent.

The wider prevalence of blindness among Negroes than among whites is due largely to the greater susceptibility of the former to disease in general, together with insufficient care after its acquirement; and to their being less fully in touch with medical facilities for the treatment of disorders affecting the eyes. With no small number certain diseases are permitted to run their course unchecked, leaving blindness in their wake. The very high ratio of blindness among Indians is, apart from like considerations, attributable largely to trachoma, a disease which has attacked that race with peculiar malignity; and in a somewhat less degree to a larger prevalence of smallpox among them. The reason for the special incidence of blindness among the foreign born lies mainly in the hazard to the eye which attends the industrial operations of many of them; a large proportion are in early adult life, the age when blindness from such causes is most frequent. A contributing factor is the relatively large number of old persons among them, a group upon which blindness is particularly likely to fall.¹

PROPORTIONS ACCORDING TO GEOGRAPHIC DIVISIONS

In the following table is given for the several geographic divisions the ratio of the blind per 1,000,000 of general population according to race (1920 and 1930).²

RATIO OF BLIND BY GEOGRAPHIC DIVISION ACCORDING TO RACE

GEOGRAPHIC DIVISION	RATIO PER 1,000,000 OF GENERAL POPULATION							
	1920				1930			
	Total	White	Negro	Indian	Total	White	Negro	Mexican Indian
United States.....	497	482	602	1996	517	485	767	560 2064
New England.....	635	631	873	7580	484	487	862	... 2400
Middle Atlantic.....	421	415	626	1684	381	378	500	149 1169
East North Central.....	570	557	962	3950	558	546	819	103 1800
West North Central.....	487	469	1102	2040	658	623	1727	310 2314
South Atlantic.....	478	440	562	878	521	457	750	... 210
East South Central.....	555	536	600	6161	612	536	808	... 1905
West South Central.....	416	386	507	1270	503	450	698	519 1042
Mountain.....	571	543	844	1717	638	545	1133	980 2900
Pacific.....	423	411	774	3096	474	466	1166	722 3421

For Negroes ratios above the average appear in the New England, the two North Central, and the two far Western divisions; the ratios seem particularly high in Western regions. Sections of the country where blindness among Negroes prevails so widely are in a considerable degree those sections into which this race has been migrating

¹ There are comparatively few blind persons who enter the country as immigrants. Though there is no direct legal prohibition, they may well be included among those liable to become public charges. (Persons suffering from trachoma are expressly excluded.) Economic difficulties would in general constitute an effective barrier.

² See also Report of California Department of Social Welfare, 1926, p. 147.

in such heavy numbers of recent years. It would thus seem quite probable that Negroes in their new environment succumb the more readily to diseases which produce blindness, or are the more subject to eye accidents in industry. (Negroes so migrating are known to have as a rule a relatively high morbidity and mortality rate, at least for a time.) Medical facilities more available generally in the North, especially in the large cities (to which Negroes so frequently move), seem as yet insufficient to counteract tendencies to blindness. With Mexicans ratios are relatively largest in the Western regions. With Indians high ratios, though most pronounced in the Far West (the regions in which they are so largely congregated), are also notable in other parts of the country. Possibly in certain areas there is among them a general state of weakness or debility, including a considerable tendency towards blindness. In some areas where there are relatively high ratios for whites, this is probably due in no small part to the operation of a disease like trachoma (a disease from which Negroes appear to be largely immune).¹

PROPORTIONS ACCORDING TO SEX

In the following table is given for the several race and nativity classes the percentage distribution of male and female blind, together with the ratio of males per 100 females among the blind and in the general population (1920 and 1930).

PERCENTAGE DISTRIBUTION OF MALE AND FEMALE BLIND BY RACE AND NATIVITY

RACE AND NATIVITY	1920				1930			
	PER CENT DISTRIBUTION		MALES PER 100 FEMALES		PER CENT DISTRIBUTION		MALES PER 100 FEMALES	
	<i>Male</i>	<i>Female</i>	<i>Blind</i>	<i>General Popu- lation</i>	<i>Male</i>	<i>Female</i>	<i>Blind</i>	<i>General Popu- lation</i>
Total.....	100.0	100.0	134.6	104.0	100.0	100.0	135.3	102.5
White.....	86.6	87.5	133.3	104.4	82.9	84.6	134.1	102.7
Native.....	71.0	72.6	135.7	101.7	....	....	....	....
Foreign born.....	15.6	14.9	158.5	121.7	....	....	....	....
Negro.....	12.4	11.4	146.2	99.2	14.8	13.1	143.3	97.0
Mexican.....	....	....	....	....	1.2	1.2	134.7	114.3
Indian.....	0.8	1.1	106.8	104.8	1.0	1.1	126.2	104.9
Other colored.....	0.1	....	....	288.6	0.1	....	775.0	245.8

Blindness is found relatively to a greater extent with males among all groups except whites and Indians. The excess for males over

¹ Very similar results are found with respect to percentage distribution by geographical division according to race and nativity classes. (See census reports.) With other colored blindness seems to prevail especially in the Southwest. Foreign-born whites have a higher proportion than native in nearly all divisions.

females is especially great among Negroes and Mexicans (and other colored)—a circumstance perhaps in some part ascribable to their greater liability to industrial accidents, and to exposure to weather and other conditions which may have eventually injurious effects upon the eyesight, and possibly also to the greater prevalence among them of venereal disease, which may result in blindness. Among foreign-born whites the proportion for males is above the average, in large part because of their special liability to eye accidents in industry (there being also a considerable excess of males in this group).¹

¹ In Table XVIII in Appendix A is given for the two sexes the ratio of the blind by race according to geographic divisions.

CHAPTER XII

THE BLIND BY AGE

GENERAL AGE DISTRIBUTION OF BLIND

In the following table are given according to age the percentage distribution of the blind and their ratio per 1,000,000 of general population of the same age (1920 and 1930), together with the percentage distribution of the general population (1930).¹

PERCENTAGE DISTRIBUTION AND RATIO OF BLIND ACCORDING TO AGE

AGE	PER CENT DISTRIBUTION OF GENERAL POPULATION	BLIND			
		PER CENT DISTRIBUTION		RATIO PER 1,000,000 OF GENERAL POPULATION	
		1920	1930	1920	1930
Total.....	100.0	100.0	100.0	492	465
Under 5 years.....	9.3	0.7	0.8	32	43
5 to 9 years.....	10.3	2.7	1.7	123	88
10 to 14 years.....	9.8	4.6	2.9	225	150
15 to 19 years.....	9.4	4.7	3.2	257	174
20 to 24 years.....	8.9	4.0	3.0	224	174
25 to 29 years.....	8.0	3.9	3.0	223	196
30 to 34 years.....	7.4	3.6	3.7	234	250
35 to 39 years.....	7.7	4.9	4.3	326	288
40 to 44 years.....	6.3	4.8	5.0	394	405
45 to 49 years.....	5.8	5.9	5.8	530	525
50 to 54 years.....	4.8	5.9	6.9	652	718
55 to 59 years.....	3.7	7.0	7.1	1,024	966
60 to 64 years.....	3.1	7.9	8.2	1,371	1,406
65 to 69 years.....	2.3	8.4	9.2	2,122	2,072
70 to 74 years.....	1.5	8.8	10.3	3,292	3,421
75 to 79 years.....	0.9	8.8	9.5	5,360	5,545
80 to 84 years.....	0.5	6.8	7.9	8,784	9,259
85 years and over.....	0.2	6.4	7.5	15,858	18,079

The most striking feature of this table is seen to be the constantly increasing proportions of the blind with the advancing age periods of life. This fact is sharply brought out when contrast is made with the age distribution of the general population. With the latter the heavy proportions are grouped in the early periods of life, steadily

¹ Sources of statistics as before.

becoming less as the years progress. With the blind the reverse is the case.

The proportion of the blind in the tender years of infancy is very small.¹ Through childhood and youth the proportion slowly increases. In early adult life, or from twenty to thirty, there is a slight decline; but at the latter age this is overcome, and from then on there are constantly increasing proportions, up to extreme old age. This increase, continuing in practically every successive age period through life, is interrupted only at the advanced age of eighty. Even then the proportions are much larger than in the general population, among which the numbers have in fact begun rapidly to thin out.

The blind are thus found largely in adult life, especially in the later years, and most pronouncedly in those of advanced age. Indeed, so notable is the relative increase in the number of the blind in the higher age periods of life that blindness may well be regarded as a condition peculiarly incident to old age, or even a disorder to which old persons are peculiarly liable.

Statistically stated, there are found under twenty years, or in youth, one-twelfth (8.6 per cent) of the blind; from twenty to fifty-nine, or in the working period of life, two-fifths (38.9 per cent); and after fifty-nine, or in advanced life or old age, over one-half (52.7 per cent). To present the matter differently, over nine-tenths (91.8 per cent) of the blind are twenty years of age or over; well over four-fifths (85.8 per cent), thirty or over; over three-fourths (77.8 per cent), forty or over; two-thirds (66.6 per cent), fifty or over; over one-half (52.8 per cent), sixty or over; over one-third (35.2 per cent), seventy or over; and one-sixth (15.6 per cent), eighty or over.

The situation is made even more striking when compared with that in respect to the general population, in which the number of old persons constantly decreases in the higher age groups. The abnormal age composition of the blind is brought into relief by the consideration that of the general population almost two-fifths (38.8 per cent) are under twenty, over two-thirds (70.8 per cent) under forty, over nine-tenths (91.4 per cent) under sixty, and only 8.6 per cent sixty years or over. The situation becomes still more marked when examined in conjunction with the rapidly mounting ratios of the blind to the general population at the different periods. This ratio starts at 43 at the age group under five years, and swiftly rises till at eighty-five and over it attains the enormous figure of 18,079.

¹ The numbers of the blind reported at such period are probably considerably understated. In many cases the existence of the defect is not recognized early; in other cases there is a reluctance to state that blindness occurred at birth or shortly after.

There are several things to account for this distribution of the blind as to age, especially their decided concentration in advanced ages. Blindness results usually from certain disorders which of themselves are not likely to occasion death, and the number of persons blind at any given period is made up of those who have become blind at that time, plus all those who have become blind at preceding periods; there are thus increasingly large numbers of blind persons with advancing years. At the same time there are, besides a general weakened condition, certain affections causing blindness which are peculiarly apt to befall persons in the later years of life, serving to swell the numbers of the blind in those years. These are especially cataract and glaucoma. The former disease is liable to induce blindness at any period of life, but its occurrence is in great part associated with advanced years, "senile cataract" being a generic term for practically all cases of cataract which are not found at birth or which are not the direct result of some specific complaint.

A final means of comparing the age distribution of the blind with the general population is through their respective median ages.¹ For the former this is 61.6 years and for the latter 26.4—considerably more than twice as great for the one as for the other.²

DISTRIBUTION ACCORDING TO SEX

In the following table are given for each sex the percentage distribution of the blind and of the general population according to age, ratio of the blind per 1,000,000 of general population at different ages, and the number of males per 100 females among the blind and in the general population (1930).³

In the period of childhood and youth, or under twenty years of age, the proportions for the two sexes show practically no differences. During the larger part of adult life, or from twenty to sixty-five—that is, during what may be regarded as the working period of life—males are in the ascendancy, having a proportion of practically one-half (50.9 per cent), as against two-fifths (41.3 per cent) for females.

¹ See *post*, p. 185.

² In Table XEX in Appendix A is given for the several geographic divisions the percentage distribution of the blind according to age, together with the ratio for each age group per 1,000,000 of general population (1930). (See also "The Blind in United States: 1920," 1928, p. 37.) This distribution is to a considerable extent a reflection of the distribution by age of such population. At some periods of life the ratios are considerably affected by the proportions therein of the foreign born, or of Negroes or Indians, among whom blindness may fall more heavily or less heavily at certain ages; by the extent to which different sections of the country are given over to industrial activities likely to cause injuries to the sight in later youth and early middle life; by the extent to which certain diseases causing blindness are relatively prevalent or endemic; and by the extent to which medical facilities may be available in different sections.

³ Figures with respect to general population in part estimated.

PERCENTAGE DISTRIBUTION AND RATIO OF BLIND BY SEX ACCORDING TO AGE

AGE	PER CENT DISTRIBUTION				RATIO PER 1,000,000 OF GENERAL POPULATION		MALES PER 100 FEMALES	
	BLIND		GENERAL POPULATION		Male	Female	BLIND	GENERAL POPULATION
	Male	Female	Male	Female				
Total.....	100.0	100.0	100.0	100.0	588	544	135.7	102.5
Under 5 years.....	0.8	0.8	9.3	9.3	48	39	127.3	103.6
5 to 9 years.....	1.8	1.7	10.3	10.3	101	75	139.3	101.6
10 to 14 years.....	2.8	2.8	9.8	9.8	173	131	135.1	102.2
15 to 19 years.....	3.2	3.2	9.3	9.6	202	149	123.0	96.0
20 to 24 years.....	3.2	2.9	8.6	9.1	223	142	151.3	96.5
25 to 29 years.....	3.2	2.9	7.8	8.2	240	157	150.0	99.2
30 to 34 years.....	4.0	3.0	7.3	7.5	318	181	174.7	100.2
35 to 39 years.....	4.7	3.7	7.8	7.6	359	217	173.1	104.9
40 to 44 years.....	5.4	4.1	6.4	6.2	495	295	176.8	105.3
45 to 49 years.....	6.5	4.9	6.0	5.6	514	391	174.9	109.7
50 to 54 years.....	7.6	6.0	4.9	4.6	915	572	179.5	109.7
55 to 59 years.....	7.7	6.3	3.8	3.6	1,077	773	166.6	112.0
60 to 64 years.....	8.6	7.5	3.2	3.0	1,755	1,128	155.5	107.9
65 to 69 years.....	9.0	9.2	2.4	2.2	2,256	1,825	131.8	107.4
70 to 74 years.....	9.9	10.9	1.5	1.6	3,600	3,085	122.9	100.7
75 to 79 years.....	8.7	10.6	0.8	0.8	6,792	5,800	110.6	97.0
80 to 84 years.....	6.8	9.3	0.3	0.4	13,156	9,989	99.2	72.8
85 years and over...	5.8	9.6	0.4	0.4	8,750	10,422	81.2	81.1

In advanced life and old age, or after sixty-five, females are ahead, the proportions being almost exactly reversed from the preceding period (49.6 per cent for females and 40.2 per cent for males). The excess proportion for males is greatest at about fifty, or near the peak of the period of economic activity. The median age for males is 59.3 years, and for females 64.9. (In the general population females take the lead at fifteen, and hold it through most of life, the proportions for the two sexes being nearly the same in the later years of life.)

The differences in the proportions at different ages for either sex among the blind are in some measure but a reflection of conditions with the general population. They also represent to a certain extent the increased incidence of ocular affections for one sex as against the other at different periods of life. More particularly, the larger proportions for males in the working years of life are due to their greater liability at this time of life to accidents to the eye occurring in industrial processes, and also to a certain extent to accidents occurring in sports and amusements, males being the more active and adventurous in this regard. A contributing factor is doubtless the greater preva-

lence among males of venereal diseases, which have considerable connection with certain forms of blindness, and which would have most pronounced effects at this time of life. The larger proportions for females in the later years of life are in part to be ascribed to the generally greater longevity of females, and in part to their greater susceptibility to two diseases incident to such years—cataract and glaucoma.¹

MEDIAN AGE ACCORDING TO RACE

In the following table is given the median age for the several racial groups, and for each sex separately, among the blind and in the general population (1920 and 1930).

MEDIAN AGE OF BLIND BY RACE

RACE	BLIND						GENERAL POPULATION		
	1920			1930			1930		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total.	58.0	56.3	60.8	61.6	59.3	64.9	26.4	26.7	26.1
White.	58.5	56.9	60.9	62.4	60.2	65.7	26.9	27.2	26.7
Negro.	53.8	52.1	58.1	56.6	54.5	60.4	23.4	23.7	23.2
Mexican.	...	...	...	56.3	56.0	56.7	20.2	21.6	18.7
Indian.	65.3	61.3	68.0	66.6	67.5	64.9	19.6	20.0	19.1
Other colored.	60.0	58.1	...	61.5	61.9	60.0	28.4	32.4	16.8

With Indians the median age for the blind is well over three times as great as for the population in general. It is next highest in the case of whites and other colored; it is lowest in the case of Negroes and Mexicans. The median age is higher for females than for males with all groups among the blind except Indians and other colored. (With the general population the median age for males is higher for all groups.)²

¹ In Table XX in Appendix A is given for each sex the percentage distribution of the blind by age (1920). In Table XXI is given the ratio of the blind, and of either sex, by age per 1,000,000 of general population for the several geographic divisions.

² In Table XXII in Appendix A is given the percentage distribution of the blind and of both sexes, according to age among the several racial groups (1930). Much the largest proportion of the blind in childhood and youth (under twenty) is found with Mexicans; they are followed in order by other colored, whites, Indians, and Negroes. Much the largest proportion in early and middle adult life (from twenty to sixty-four) is found with Negroes; they are followed by Mexicans, whites, Indians, and other colored. Much the largest proportion in old age (sixty-five and over) is found with Indians; they are followed by other colored, whites, Negroes, and Mexicans. [Foreign-born whites have the lowest proportion (1920) in childhood and youth (2.0 per cent) and in early and middle adult life, and the highest in old age.] In Table XXIII is given the percentage distribution by age for whites, Negroes, and other colored (1920). In childhood and youth there are larger proportions for females than for males among all groups, except whites. In old age there are larger

proportions for females among all, except Indians; excess proportions for females are most pronounced in the case of Negroes and Mexicans. To some extent differences among the several blind groups are but representations of the age distribution of these groups in the population at large. To some extent also they doubtless reflect the incidence of blindness or the relative susceptibility to blindness of different groups at different times of life. High proportions for some groups in early and middle adult life may be due in some measure to the action of venereal disease. (With the foreign born there is a relatively larger proportion of females in advanced years, males suffering the more from accidents to the eye in earlier years.)

NOTE TO CHAPTER XII.—On the age of the blind, see *Journal of American Medical Association*, lrv., 1915, p. 868; *Lancet-Clinic*, cx., 1913, p. 487; *Ohio State Medical Journal*, v., 1909, p. 468; *Journal of Missouri State Medical Association*, xxiii., 1926, p. 179; *Outlook for Blind*, iii., 1910, p. 161; *Archives of Ophthalmology*, lvi., 1927, p. 470; Report of Pennsylvania Institution, 1909, p. 22; Massachusetts Bureau of Labor Statistics, Bulletin no. 12, 1906; Proceedings of American Association of Workers for Blind, 1909, p. 36; Report of Ohio Commission for Blind, 1908, p. 15; Report of Massachusetts Commission for Blind, 1907, p. 14; Report of New Jersey Commission to Investigate Condition of Blind, 1909, p. 7; Report of New York Commission for Blind, 1906, p. 77; 1928, p. 33; Report of Maryland Commission for Blind, 1908, p. 5; Report of Connecticut Board of Education of Blind, 1926, p. 104; 1930, pp. 31, 113; Report of Minnesota Board of Control, 1924, p. 40; Report of California Department of Social Welfare, 1926, p. 147; Report of Massachusetts Board of Education, Division of Blind, 1919, p. 14; Report of Wisconsin Bureau for Blind, 1923, p. 4; Report of Wisconsin Board of Control, 1924, p. 45; 1926, p. 393; California Department of Social Welfare, "The Adult Blind in California," 1929, p. 6.

CHAPTER XIII

THE BLIND BY AGE AT OCCURRENCE OF BLINDNESS

GENERAL DISTRIBUTION OF BLIND BY AGE AT OCCURRENCE OF BLINDNESS

In the following table is given the percentage distribution of the blind, and for each sex separately, together with the ratio of males to females, according to age when vision was lost (1920).¹

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO AGE AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT DISTRI- BUTION			MALES PER 100 FEMALES
	Total	Male	Female	
Total.....	100.0	100.0	100.0	142.1
Under 20 years.....	36.9	34.6	40.1	122.6
Under 5 years.....	20.9	18.8	23.8	112.3
Born blind.....	10.0	9.3	11.0	119.8
Under 1 year.....	5.5	4.7	6.8	97.6
1 to 4 years.....	5.4	4.9	6.1	115.1
5 to 9 years.....	6.2	5.9	6.7	124.3
10 to 14 years.....	4.6	4.8	4.4	156.8
15 to 19 years.....	3.5	3.8	3.2	168.1
Age not definitely reported.....	1.6	1.3	2.0	92.9
20 to 64 years.....	43.4	47.7	37.4	180.9
20 to 24 years.....	3.9	4.7	2.7	247.5
25 to 34 years.....	7.8	9.2	5.8	224.2
35 to 44 years.....	9.5	11.1	7.1	223.1
45 to 54 years.....	10.4	11.0	9.6	162.1
55 to 59 years.....	5.1	5.1	5.1	143.2
60 to 64 years.....	6.3	6.1	6.6	130.9
Age not definitely reported.....	0.5	0.4	0.5	....
65 years or over.....	19.7	17.7	22.4	112.4
65 to 69 years.....	5.5	5.3	5.7	131.8
70 to 74 years.....	5.7	5.3	6.3	120.3
75 to 79 years.....	4.0	3.4	4.8	101.9
80 years or over.....	4.1	3.3	5.1	91.8
Age not definitely reported.....	0.4	0.3	0.5	....

Somewhat as a corollary of what has been discovered with respect to the age of the blind, it is found that blindness falls with ever increasing frequency upon men and women advancing in life. That is, blindness not only exists as a condition to a relatively wider extent

¹ Sources of statistics as before.

in the later years of life, but occurs, as the result of some disease or accident, much more often in such later periods.¹

Over one-third (36.9 per cent) of the blind lost their sight in childhood or youth, or before twenty years; over two-fifths (43.4 per cent), during early or middle adult life, or between twenty and sixty-four; and practically one-fifth (19.7 per cent), in old age, or after sixty-four. To put the matter differently, nearly two-thirds (63.1 per cent) of all blindness falls at twenty or after, or in adult life; a little over one-half (51.5 per cent), after thirty-four, or after early adult life; almost one-third (31.6 per cent), after fifty-four, or in later adult life; and about one-seventh (14.2 per cent), at seventy or over, or in old age. The median age at the occurrence of blindness is 36.9 years.²

Of the blindness occurring under twenty years, or in childhood and youth, almost two-thirds occurs in the first five years, nearly one-half being reported as from birth.³ The proportions decline until thirty-five, or until the most active period of life, when there is a slight increase, which continues to sixty-five, the maximum being at the period sixty to sixty-four. After this time there is a slight downward trend through the remainder of life. This movement, however, with respect to the age of the occurrence of blindness is to be taken with some qualification. The numbers in the general population, with the advance of the years become constantly smaller, so that the number upon whom blindness might fall is constantly being diminished with advancing years. In view of this fact, the increasing proportions in the later years emphasizes what has already been said, that, because of generally weakened powers and because of the special incidence of certain eye diseases at that time of life, the elderly and the aged are the ones peculiarly subject to blindness. As with the number of the blind at different ages, blindness falls with ever accelerated rapid-

¹ These figures "do not show the relative number who within a given year or other period of time lose sight at each age and they are still further from measuring the relative incidence of blindness at the respective ages. . . . Among the blind living at any given time there will, all other things being equal, be more who lost their sight in the earliest years of life than in any subsequent period of equal length, for the reason that the living blind who lost their sight in these years represent the accumulation of the greater part of a century, while each succeeding group with regard to age when vision was lost will have been accumulating for an increasingly briefer period." "The Blind in the United States: 1910," 1917, p. 83.

² See *post*, p. 191.

³ Reports as to the number of blind persons born blind or losing sight in the first year of life are very uncertain, it being often impossible at such early periods to know precisely when the absence of vision was first manifested or when its loss actually occurred; this fundamental difficulty is accentuated by the frequent lack of competent medical examination and by the occasional reluctance of parents to state the real situation. It is also to be remembered that at the earlier years of life there are a greater number alive, and consequently a greater number upon whom blindness might fall. Blindness of hereditary character does not usually occur at birth, but manifests itself at some later period of life.

ity through life, with relatively the greatest proportions falling in advanced life and old age.¹

The proportion losing sight under twenty is 34.6 per cent for males and 40.1 per cent for females, between twenty and sixty-four 47.7 per cent and 37.4 per cent, and at sixty-five or over 17.7 per cent and 22.4 per cent. Females lose their sight relatively more frequently in childhood and youth than males. The difference is greatest in the earlier years of life, gradually lessening up to the age of ten, when males assume the lead, this circumstance, because of their greater vigor and venturesomeness, probably indicating their increasing liability to injuries to the eye from play and sports, if not from industrial hazards also. The larger proportion on the whole for females than for males under twenty is not to be taken as indicating that females are markedly in greater danger of blindness at that time of life; perhaps it only reflects the lowered proportions for males resulting from their greater numbers later on in life. The larger proportion for males continues through early and middle adult life and up to the beginning of old age. The excess for males becomes pronounced at twenty, and remains considerable to forty-five, or during the time of life when males are most actively engaged in industry. Besides the greater liability of males to loss of sight from industrial accidents in early and middle adult life, it is possible that their increased proportions at this period of life are due to a greater prevalence among them of venereal disease. At sixty the proportion for females is greater, and for the remainder of late middle life and in old age so remains, constantly increasing its lead to the end of life. The median age of the occurrence of blindness is 36.6 for males and 37.6 for females. (Similar results as to the relative frequency of the loss of sight at different ages for the two sexes are found in the ratio of males to females at these different ages. Females outnumber males at the earliest period and in old age; the ratio, relatively small at the beginning, shows a considerable advance at ten, rising thereafter to the period twenty to twenty-four years, when it is doubled. It remains high all through the period of industrial activity, when it rapidly declines.)

It is estimated that blind persons in the United States have on the average been blind for about sixteen years.²

¹ In Table XXIV in Appendix A is given for the several geographic divisions of the United States the percentage of the blind in broad groups, as to the age at the occurrence of blindness.

² "This of course represents merely the average time which had elapsed since the blind (living at the time in question) . . . had become blind; it does not indicate the average number of years that a blind person may be expected to live after losing his sight, which would probably be somewhat less. . . . This is because the proportion of the blind population losing their sight during any given period of time who are living at any given later

In the following table attempt is made to indicate the risks of blindness attending various age periods of life, by showing the ratio of persons becoming blind at specified periods per 1,000,000 of the general population who have already attained such age, representing roughly all potential cases of blindness at that age (1920).¹

RATIO OF BLIND LOSING SIGHT AT DIFFERENT AGES

<i>Age at Loss of Vision</i>	<i>Ratio per 1,000,000 of General Population</i>
Under 20 years.....	140
Under 5 years.....	79
5 to 9 years.....	26
10 to 14 years.....	22
15 to 19 years.....	20
20 to 59 years.....	237
20 to 24 years.....	25
25 to 34 years.....	59
35 to 44 years.....	105
45 to 54 years.....	189
55 to 59 years.....	178
60 years or over.....	1309
60 to 64 years.....	317
65 to 69 years.....	445
70 to 74 years.....	797
75 to 79 years.....	1088
80 years or over.....	2640

Here the risk of blindness in old age appears in striking form, its incidence at such time becoming of abnormal proportions. The ratio to the general population sixty years of age or over is 1309; that is, 1 person out of every 750 persons approximately is liable to become blind at that time of life. For the highest period, or eighty years or over, the ratio is 2640. For the periods under twenty and from twenty to fifty-nine the respective ratios are 140 and 237. The risk of blindness in the years of childhood (except earliest infancy) and youth is very low; with adult life it begins to increase, this increase continuing through life, and at a constantly accelerated rate.

DISTRIBUTION ACCORDING TO RACE AND NATIVITY

In the following table is given the percentage distribution of the blind, and of males and females separately, by age at occurrence of date will obviously be larger for those who live a long time after the loss of sight than for those who survive for only a short time." "The Blind in the United States: 1910," 1918, p. 94.

¹ With no allowance made for deaths, increases in the general population, possible changes as to risks with the passing of time, or additional cases of blindness occurring at a particular age, or cases already blind before reaching the specified age. See *ibid.*, p. 85.

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blindness, together with the median age of such occurrence, among the several race and nativity groups (1920).

PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT LOSS OF VISION ACCORDING TO RACE AND NATIVITY

AGE AT LOSS OF VISION	NATIVE WHITE			FOREIGN-BORN WHITE			NEGRO			INDIAN		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
PER CENT DISTRIBUTION												
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 years.....	43.0	40.9	45.9	12.3	10.6	15.2	29.3	28.3	31.0	30.6	27.6	35.0
Under 5 years.....	25.0	22.9	28.0	5.6	4.7	6.9	13.9	12.8	15.6	14.6	10.3	20.8
Born blind.....	12.1	11.3	13.1	1.9	1.6	2.4	7.1	7.4	6.7	4.4	4.0	5.0
Under 1 year.....	6.8	5.9	8.0	1.6	1.2	2.2	2.4	1.5	3.9	4.4	1.7	8.3
1 year.....	1.7	1.5	1.9	0.5	0.4	0.6	0.8	0.5	1.2	1.4	1.1	1.7
2 to 4 years.....	4.5	4.2	5.0	1.6	1.5	1.7	3.6	3.4	3.9	4.4	3.4	5.8
5 to 9 years.....	7.1	6.8	7.5	2.6	2.3	3.1	5.3	4.9	5.9	4.4	6.3	1.7
10 to 14 years.....	5.2	5.5	4.8	1.8	1.6	2.2	4.7	5.0	4.3	5.1	5.2	5.0
15 to 19 years.....	3.7	4.1	3.2	1.9	1.7	2.2	4.7	4.8	4.3	4.4	4.6	4.2
Age not definitely reported.....	2.0	1.7	2.4	0.4	0.2	0.8	0.8	0.8	0.9	2.0	1.1	3.3
20 to 64 years.....	39.6	43.2	34.8	54.8	60.6	45.6	54.0	58.3	47.0	48.3	55.7	37.5
20 to 24 years.....	3.9	4.7	2.7	2.7	3.1	2.0	5.7	7.2	3.2	3.7	4.0	3.3
25 to 34 years.....	7.2	8.4	5.5	8.5	10.6	5.2	11.3	12.3	9.7	10.2	13.2	5.8
35 to 44 years.....	8.2	9.6	6.4	12.4	15.1	8.2	14.4	15.9	11.9	7.8	9.8	5.0
45 to 54 years.....	9.4	9.7	8.9	14.3	15.3	12.7	12.2	13.0	10.8	13.3	15.5	10.0
55 to 59 years.....	4.7	4.6	4.8	7.1	7.5	6.6	5.1	5.1	5.1	5.1	5.7	4.2
60 to 64 years.....	5.8	5.6	6.0	9.4	8.9	10.3	5.2	4.7	5.9	7.5	7.5	7.5
Age not definitely reported.....	0.5	0.5	0.5	0.4	0.3	0.5	0.2	0.1	0.3	0.7	.....	1.7
65 years or over.....	17.3	15.9	19.2	32.8	28.8	39.3	16.7	13.4	22.0	21.1	16.7	27.5
65 to 69 years.....	4.8	4.8	4.9	9.0	8.5	9.8	5.0	4.4	6.1	5.8	4.0	8.3
70 to 74 years.....	5.1	4.8	5.5	9.4	8.6	10.7	4.9	4.1	6.4	4.4	3.4	5.8
75 to 79 years.....	3.7	3.2	4.3	6.6	5.3	8.5	2.8	2.3	3.5	2.4	2.3	2.5
80 years or over.....	3.4	2.8	4.2	7.5	6.0	9.7	3.5	2.4	5.4	7.5	5.2	10.8
Age not definitely reported.....	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.3	0.6	1.0	1.7	.....
MEDIAN AGE OF LOSS OF SIGHT (YEARS)												
	30.1	30.7	28.7	54.7	51.9	59.9	37.7	36.5	40.1	42.2	40.0	46.7

Deprivation of vision occurs much more frequently in childhood and youth among native whites, with a proportion of over two-fifths. Indians and Negroes follow, with about three-tenths; foreign-born whites are last, with only one-eighth. The very low proportion for the last named group is explained by the fact, already referred to, that most immigrants coming to the United States are in adult life, or past the period when blindness of early origin could have occurred, and by the further fact that persons blind in the old country are little likely to emigrate, or are barred when likely to become public charges. The situation as to the colored who become blind before twenty may possibly to some extent be explained by the circumstance that in later life, when their proportions are correspondingly larger, they are relatively less able to ward off eye affections or to arrest oncoming weakening of the sight. The highest proportion losing sight between the ages of twenty and sixty-four, or in the time of greatest industrial activity, is for the foreign born, a condition due largely to their special liability

to industrial accidents at this time of life, a relatively great number of this group being engaged in industrial processes. The proportion for Negroes, however, is but little less, followed by that for Indians, the proportion for native whites being the smallest. The highest proportion losing sight in old age is also found among the foreign born. The percentages for Indians, native whites, and Negroes are not very different. The median age of loss of sight is for native whites 30.1 years, for Negroes 37.7, for Indians 42.2, and for foreign-born whites 54.7.¹

DISTRIBUTION ACCORDING TO PRESENT AGE

In the following table is given the percentage distribution of the blind by age at occurrence of blindness according to present age (age at enumeration) (1920).

PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT LOSS OF VISION ACCORDING TO PRESENT AGE

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION											
	Total	Under 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 24 Years	25 to 34 Years	35 to 44 Years	45 to 54 Years	55 to 64 Years	65 to 74 Years	75 Years and Over
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5 years..	21.4	...	91.4	77.1	66.2	56.5	40.1	22.5	13.7	8.9	3.7	1.1
Born blind...	10.2	62.4	52.8	42.3	33.5	24.8	17.3	9.8	5.6	3.0	1.4	0.4
Under 1 year..	5.7	26.8	24.1	19.2	18.7	18.5	11.7	5.2	3.3	2.3	0.8	0.1
1 year.....	1.4	6.6	3.8	4.3	3.9	3.5	2.7	2.1	1.1	0.7	0.3	0.1
2 to 4 years..	4.1	4.2	10.7	11.2	10.1	9.7	8.4	5.4	3.7	2.9	1.2	0.4
5 to 9 years..	6.4	...	8.6	16.8	16.7	16.0	13.0	9.5	6.2	3.8	2.0	1.1
10 to 14 years..	4.7	...	...	6.1	13.6	12.9	10.0	8.1	5.7	3.0	2.0	0.9
15 to 19 years..	3.6	...	...	...	3.5	10.0	9.5	8.1	5.1	2.8	1.5	0.8
20 to 24 years..	4.0	...	...	...	...	...	13.5	9.6	5.9	3.3	1.8	1.1
25 to 34 years..	8.0	...	...	...	...	...	14.0	25.6	15.3	8.0	4.6	1.8
35 to 44 years..	9.7	...	...	...	...	...	...	16.6	30.5	16.5	7.9	2.7
45 to 54 years..	10.7	...	...	...	...	...	...	...	17.6	32.2	15.5	4.9
55 to 64 years..	11.7	...	...	...	...	...	...	...	...	20.5	35.7	11.7
65 to 74 years..	11.5	...	...	...	...	...	...	...	...	...	25.4	33.3
75 years or over.	8.3	...	...	...	...	...	...	...	...	...	...	39.6

A certain correspondence exists between the present age and the age when vision was lost, though with some variations. Generally, the earlier the present age of the blind the larger is the proportion who lost sight at an early age; and so on, in somewhat like measure, in succeeding ages. Up to middle life, however, there is at all periods a very large proportion of blindness reported as having occurred at birth or during the first year of life, an indication of the great risk of blindness at that time. In adult life, and particularly in later adult

¹ The differences between the sexes are on the whole most pronounced in the case of Indians. In early and middle adult life the differences are notable in the case of foreign-born whites, being mainly due no doubt to the fact that the foreign-born population contains in general a relatively large proportion of males, among whom there is a special liability at such period of life to blindness from industrial injuries.

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life, the largest proportions of blindness occur relatively late, an indication of the recentness of the affliction and of the increasing frequency of blindness in adult life. Except for congenital blindness, found in large proportions among younger persons, and except for the very inclusive group losing vision at seventy-five years or more, the most numerous single group is that of persons losing vision between the ages of fifty-five and sixty-four who are sixty-five to seventy-four years of age.

In the following table is given the distribution of the blind by present age according to age at occurrence of blindness (1920).

PERCENTAGE DISTRIBUTION OF BLIND BY PRESENT AGE ACCORDING TO AGE AT LOSS OF VISION

PRESENT AGE	PER CENT DISTRIBUTION				
	Total	Under 20	20 to 44	45 to 64	65 and Over
Total.....	100.0	100.0	100.0	100.0	100.0
Under 5 years.....	0.5	1.5	....	....	....
Under 1 year.....	....	....	....	....	....
1 to 4 years.....	0.5	1.5	....	....	....
5 to 9 years.....	2.6	7.2	....	....	....
10 to 14 years.....	5.0	14.0	....	....	....
15 to 19 years.....	5.1	14.2	....	....	....
20 to 24 years.....	4.1	10.7	0.9	....	....
25 to 34 years.....	7.7	15.3	9.9	....	....
35 to 44 years.....	9.9	13.1	24.0	....	....
45 to 54 years.....	11.9	10.1	28.3	9.5	....
55 to 64 years.....	15.0	7.7	20.1	35.9	....
65 to 74 years.....	17.5	4.3	11.4	39.2	21.9
75 and over.....	20.8	2.2	5.4	15.3	78.1

Here are evident from a different point of view the relatively small proportion of the blind losing sight at earliest life who reach old age, and the relatively large proportion losing sight in the later years of life who reach that period.¹

¹ In Tables XXV and XXVI in Appendix A are given similar but more detailed figures (1910).

NOTE TO CHAPTER XIII.—On the age at the occurrence of blindness, see Census Bureau, "The Blind and Deaf: 1900," 1906, p. 11; Report of New York Commission for Blind, 1906, pp. 137-191; Report of Massachusetts Commission for Blind, 1906, pp. 24, 28; 1907, p. 15; Report of Connecticut Board of Education of Blind, 1926, p. 105; 1930; pp. 31, 116; Report of Minnesota Board of Control, 1924, p. 40; Publications of Perkins Institution, Department of Research, no 1, Jan., 1923 ("Preliminary Study of Influence upon School Success of Age at Which Vision Was Lost"); *Charities and Commons*, xv., 906, p. 620; *Ohio State Medical Journal*, v., 1909, p. 468; *Journal of Missouri State Medical Association*, xxiii., 1926, p. 101.

CHAPTER XIV

PHYSICAL AND MENTAL CONDITION OF BLIND

GENERAL HEALTH AND PHYSICAL WELL-BEING

The general health of the larger number of the blind may be said to be little different from that of the seeing.¹ With a portion of the former, however, there may be manifested, relatively, a poor physique or a lowered physical stamina or a less robust vitality or a general lassitude.² So far as this is the case,³ it is to be regarded as in the main due to the circumstance that a more or less secluded or confined or inactive life is led, and that wholesome exercise or health-giving movements are not enjoyed or engaged in to a full extent.⁴ In certain cases there is the added circumstance that, as blindness is often the result of a specific disease (or of old age), a further effect may be the reduction of the general health below the normal.⁵ No inconsiderable proportion of the blind have other defects or infirmities or ailments (including heart trouble, digestive complaints, paralysis, tuberculosis, etc.) besides the absence of sight.⁶ Possibly the disease

¹ Of blind persons in the State of New York (1906) the health of 51.9 per cent is described as "good"; of 26.8 per cent, as "fair"; of 19.4 per cent, as "poor"; and of 1.9 per cent, as "unknown." Report of New York Commission for Blind, 1906, pp. 192-202. In California (1930) 42.5 per cent of the blind are found to be in good health, 23.5 per cent definitely infirm, 32.6 per cent in poor health, and 1.4 per cent with other defects. Report of California Department of Social Welfare, "The Adult Blind in California," 1930, p. 7. There are no corresponding figures in respect to the general population, but it can hardly be doubted that the proportions in good health are considerably larger.

² The blind as a class may be regarded as less venturesome, more timid, and more given to introspection, than is the case with the population at large. With some of the blind, especially children, there are certain physical movements, sometimes denoted as "blindisms," such as unnecessary swaying of the body, aimless motions of arms or hands, etc. See *Boston Medical and Surgical Journal*, lxxvi., 1913, p. 803.

³ Factors not considered here are the generally higher ages of the blind (with their effects); possible recollection of former eyesight, with adjustments to present conditions; degree of impaired vision; causes of impaired vision; etc.

⁴ The blind are, in general, in need of a larger outdoor life, of sport, and of special recreation facilities. See Proceedings of American Association of Workers for Blind, 1925, p. 172. Of former pupils of the Pennsylvania Institution, 6.2 per cent are found to avail themselves of means of recreation for self-improvement. Publication of Pennsylvania Institution, no. 3, 1924, p. 21 ("What Can the Blind Do?").

⁵ On the health of the blind, see B. W. West, "Report of Experiments in Nutrition at California School for Blind," 1929; Transactions of College of Physicians (Philadelphia), 1897, p. 180; *Dental Cosmos*, xxxi., 1889, p. 510; *International Medical Magazine*, vii., 1898, p. 167.

⁶ Of blind persons in one county in Ohio (1913) 15.0 per cent have other defects in addition to blindness. *Lancet-Clinic*, cx., 1913, p. 487. On the extent of a "double handicap" with the blind, see Report of Minnesota Board of Control, 1924, p. 103. See also *post*, pp. 219, 491.

or accident which caused the blindness may have left in its train other weaknesses or impairments of other parts of the system, or have induced arrested development in some particulars.¹ In other words, the deteriorated physical condition of some of the blind is to be looked upon, not so much as a result, but as a circumstance, of blindness.

At times loss of vision is attended with an impairment, perhaps a greater or less shattering, of the nervous system, with consequent increased nervous instability. Possibly there is inherited some general or particular defect, of which blindness is largely but a sequela or symptom. Possibly there has been in the system some disorder of which blindness is the accompaniment or result.²

A further unfavorable circumstance with some of the blind, especially younger ones, may be actual neglect or failure to understand or minister appropriately to their particular needs, all of which may contribute to their physical deterioration or loss.³

Largely as a result of the foregoing considerations, a portion of the blind, especially of those becoming so in early life, may not be expected to live as long as persons having sight. Certain light may be thrown on their longevity by the indicating as far as possible of the extent to which the present age of blind persons is affected by early loss of vision. This may be done in the following table, in which is shown for persons in adult life, or twenty years of age or over, who lost their sight when under that age, the percentage distribution according to the actual age at which such loss occurred (1920).⁴

In general, for those who lose sight in the first years of life, or are born blind, the proportion declines steadily in each successive age period in life, while the proportion for those who lose sight in the later years of childhood and youth shows a corresponding advance. In other words, the earlier the loss of sight, the smaller is the proportion of the blind who attain to advanced life. There is evidently a marked effect upon longevity in that blindness which occurs at the beginning of life, especially at birth or in the first year. Possibly in

¹ "Blindness is often the evidence of the loss borne by the frail body barely saved from death." Proceedings of American Association of Instructors of Blind, 1932, p. 746.

² On possible correlation of blindness, deafness, and feeble-mindedness see *Science*, v., 1885, p. 127.

³ There are said to be 1 per cent of vagrants with seriously defective vision. F. C. Laubach, "Why There Are Vagrants," 1916, p. 62. On the matter of defective sight in delinquency, see William Healy, "Individual Delinquent," 1915, p. 217.

⁴ Statistics are from Report of Census Bureau, "The Blind Population of the United States: 1920," 1927. In the registration area of the United States, the average annual number of deaths from eye diseases or their adnexa from 1901 to 1905 was 22, from 1906 to 1910, 29, and from 1913 to 1916, 58.2, or 1.0 per 1,000,000 of general population at each period. Census Bureau, "Mortality Statistics: 1916," 1918, p. 79.

PERCENTAGE DISTRIBUTION OF ADULT BLIND ACCORDING TO AGE AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION			
	<i>Total</i>	<i>20 to 39 Years</i>	<i>40 to 59 Years</i>	<i>60 Years and Over</i>
Total.....	100.0	100.0	100.0	100.0
Under 5 years.....	49.8	54.7	46.4	39.1
Born blind.....	20.9	23.7	18.5	14.9
Under 1 year.....	13.3	16.0	11.5	7.9
1 year.....	3.8	3.8	4.3	2.7
2 to 4 years.....	11.8	11.2	12.2	13.6
5 to 9 years.....	19.3	18.1	19.5	23.7
10 to 14 years.....	16.2	14.1	17.9	19.7
15 to 19 years.....	14.7	13.1	16.2	17.5

consequence of the disorder producing the original blindness, the system has been more or less weakened or debilitated, or vitality has been more or less impaired, so that as long a span of life is not to be expected as otherwise might be.¹ In certain life insurance investigations the death rate among the blind is found to be higher than with the general population.²

By some life insurance companies (perhaps three-fourths) blind persons may be accepted for insurance.³ This is done, however, generally only for a selected group, or with restrictions, especially through a sub-standard policy, or with a "rating-up," or with an extra premium charge, or for a person of a higher age, or with limitations placed upon the amount of the policy, or with certain other limitations.⁴ The most frequent procedure is by means of an extra premium.⁵

The blind are generally refused accident insurance altogether. Some railroads have declined to receive blind persons as passengers traveling unaccompanied. The number of such railroads is now growing less, largely because of the efforts of the blind themselves.⁶ The blind, however, do not appear to be especially subject to accidents in going

¹ On the general longevity of the blind, see Werner's Encyclopædia, 1909, ii., p. 7. Of ex-pupils of the Pennsylvania Institution from 1907 to 1922, the mortality rate is believed to be appreciably higher than among persons having sight of the same age. Publications of Pennsylvania Institution, no. 3, June, 1924, p. 7 ("What Can the Blind Do?").

² In an investigation of 4298 insured blind persons from 1909 to 1927 the death rate is 36, as against an expected rate of 22.9. (Among persons blind in one eye the rate is also somewhat higher.) Actuarial Society of North America, "Medical Impairment Study," 1929, p. 68. See also Association of Life Insurance Medical Directors, Medical Actuarial Investigation, iv., 1914, pt. 1. See in addition data of American Foundation for Blind.

³ In 1923 the proportion was one-third.

⁴ See *Outlook for Blind*, Dec., 1923, p. 7; March, 1925, p. 47; xxvii., 1933, p. 179.

⁵ This is most often \$5 per \$1000 of insurance, and less often \$2.50. To some extent there is consideration of cause of blindness, occupation, etc.

⁶ On the "one-fare" privilege on railroads for the blind and their companion, see *post*, p. 261.

about alone.¹ Their liability to injury thereby appears not to be greatly increased.²

MENTAL CONDITION

Just what relation may exist between blindness and mental ability is as yet but little known. With no small number of the blind it is not to be doubted that intellectual powers are fully as great as with those having the sense of sight. In the attainments and achievements of certain individuals, both among those whose blindness has been but a recent affliction and among those who have never known anything else, there is ample attestation of the possession of the highest and keenest mental faculties. With a portion of the blind, however, mental limitation or impairment or defect seems to prevail to a somewhat wider extent than with the general population, this ranging from a condition just below par to actual feeble-mindedness. The blind are to be regarded as of several different groups mentally, including the normal and those with varying but appreciable mental handicaps.³ A segment is to be held as of distinct mental retardation. There may have been in some instances a certain correlation between mental deficiency and the destruction of vision—not that one is due to the other, but rather that both may have proceeded from the same fundamental cause. This is perhaps the more true of the blind who lost their sight in the earlier years of life. What evidences we have seem to indicate on the whole a larger amount of mental subnormality among the blind than in the population at large. A possibly better way of putting the matter is that a portion of the mentally defective are blind.⁴

¹ Police officers often give the blind special attention crossing streets. The public in general is usually willing to accord necessary consideration. Many of the blind, however, get along well enough entirely of themselves. In certain instances trained dogs are employed to lead the blind about. See *Outlook for Blind*, March, 1929, p. 16; June, 1929, p. 26; Sept., 1929, p. 23; *Saturday Evening Post*, Nov. 5, 1927, p. 43; *Popular Mechanics*, lii., 1929, p. 59; *Literary Digest*, July 13, 1929, p. 36; *Shepherd Dog*, March, 1930, p. 7; *American Magazine*, July, 1930, p. 74; *World Today*, li., 1928, p. 289; *Woman's Journal*, May, 1930, p. 10; *Nature Magazine*, xlii., 1929, p. 90; Proceedings of American Association of Workers for Blind, 1931, p. 61; Report of New York Association for Blind, 1931, p. 58; D. H. Eustis, "Dogs as Guides for Blind," 1929; *Fortune*, July, 1933, p. 66.

² In the insurance investigations already referred to no deaths from accidents are recorded for the blind.

³ A distinction is to be made between feeble-mindedness, or lack of mental development, and pathological conditions, or diseases of the mind, including faulty emotional habits.

⁴ In California, 51.8 per cent of the blind have been reported to be of good mentality, 31.4 per cent to be senile, 2.8 per cent feeble-minded, 11.4 per cent psychopathic, and 2.6 per cent insane. California Department of Social Welfare, "The Adult Blind in California," 1929, p. 6. See also Report of Connecticut Board of Education of Blind, 1930, pp. 115, 119. In 1910 of the blind in the United States, 0.9 per cent were found in institutions for the insane. Report of Census Bureau, "The Blind in the United States: 1910," 1917, pp. 68, 69. (The number of the insane in special hospitals in 1910 constituted 0.2 of the population of the entire country.)

Of blind adults the proportion said to be of weaker mind varies from a few per cent to a proportion several times as great.¹ (A frequent estimate for the general population is 0.5 per cent.) For blind youths, or for those under twenty years of age, the proportions of retarded mental development are stated to vary similarly.²

In special investigations that have been made blind children as a group have been discovered to test somewhat lower mentally than children who can see. That is to say, the proportion above the average mentally is appreciably smaller, and the proportion below the average is appreciably greater, with the former than with the latter. For three schools for the blind the percentage of pupils above the average is found to be 6.3, and for 1000 children in regular schools for sighted children 11.5. Corresponding percentages below the average are 24.0 and 10.3.³

BLIND DEAF-MUTES

Just how many deaf-blind persons, or blind deaf-mutes, or persons at the same time bereft of sight, hearing, and speech (unless specially trained in speech) there are in the United States, we do not definitely know. In connection with the Federal census of 1930 there were enumerated 1942 (no attempt being made at checking up this figure). In 1920 there were special reports for 169. (A considerable number of the original returns of such persons proved erroneous.) In 1910 there were returns for 584 persons of this description, but special reports

¹ One estimate is one-sixth. Proceedings of National Conference of Charities and Corrections, 1906, p. 259. Another is 9.0 per cent. *Outlook for Blind*, x., 1916, p. 90. Another is 11.8 per cent. *Ibid.*, iii., 1909, p. 15. In 1910, of inmates of institutions for the feeble-minded, 0.6 per cent were blind, varying in different geographic divisions from 0.3 per cent to 10.5 per cent. Report of Census Bureau, "The Insane and Feeble-minded in Institutions," 1914, pp. 190, 205. Of the blind enumerated in 1910 there were 0.2 per cent in institutions for the feeble-minded. *Ibid.*, "The Blind in the United States: 1910," 1918, pp. 68, 69.

² One estimate is 15 per cent. Report of Massachusetts Commission for Blind, 1911, p. 25. Another estimate is 20 per cent. Report of Illinois Board of Public Charities, 1908, p. 222. Another is from 10 to 20 per cent. Report of Minnesota School, 1910, p. 39; *Outlook for Blind*, vi., 1912, p. 65. Another is 9.4 per cent. Ohio Board of Administration, publication no. 9, 1916 ("Mental Survey of Ohio State School for Blind"). In the Perkins Institution from 2 to 3 per cent of pupils are discharged each year because of their feeble-minded condition. Report, 1917, p. 38. In the Pennsylvania Institution 10 per cent of pupils are said to be of so low a mentality as to warrant their discharge. See Report of Pennsylvania Institution, 1916, p. 103; Proceedings of American Association of Instructors of Blind, 1916, pp. 10, 30; 1920, p. 31.

³ With the blind, 12.0 per cent are found to be dull, 7.0 per cent borderline, and 5.0 per cent feeble-minded. The corresponding percentages for children with sight are 8.0, 2.0, and 0.3. *Outlook for Blind*, xiv., 1920, p. 5. See also Proceedings of American Association of Instructors of Blind, 1918, p. 42; 1920, p. 10. In certain schools for the blind 15 per cent of the pupils have been declared to be superior intellectually, 40 per cent average, 35 per cent backward or dull, and 10 per cent probably feeble-minded. See Report of Pennsylvania Institution, 1921, pp. 21, 75. See also *ibid.* 1924, p. 76; Publications of Pennsylvania Institution, 3, June, 1924, p. 9 ("What Can the Blind Do?"); reports of Perkins Institution, *passim*.

for only 96.¹ In 1900 there were 491 reported. In private investigations there have been 618 reported (1930).²

Of the 169 blind deaf-mutes in 1920, 79 were male and 90 female. (In 1910 the respective numbers were 52 and 44.) There were 159 white and 10 colored. Of the whites, 150 were native; of the colored, 9 were Negro. By age, 45 were under twenty-five; 58, from twenty-five to forty-nine; 54, from fifty to seventy-four; and 12, over seventy-four. With 33 blindness was congenital, and with 88 deafness. Only 7 lost their hearing after nine years of age, while 74 lost their sight after that age. In fact, most of the cases were of deaf-mutes who later became blind, their blindness having apparently no relation to their deafness. The main causes of deafness, apart from congenital deafness, were meningitis and scarlet fever. With the exception of these two diseases and of measles, brain fever, catarrh, abscess in the head, and typhoid fever, no specific cause was represented more than once. The noncongenital causes of blindness were more varied. Meningitis, cataract, and scarlet fever were the leading ones. With the exception of these and of accidents from flying objects, brain fever, measles, catarrh, glaucoma, corneal ulcer, typhoid fever, and epilepsy, no specific cause was found in more than a single instance. In no case were both parents blind deaf-mutes, though in one case both parents were deaf. In two cases one parent was blind, and in three cases one parent was deaf, the other parent in these cases being free from either blindness or deafness. Of the 159 persons reporting brothers or sisters, there were 23 with both blind and deaf brothers or sisters, 23 with only deaf brothers or sisters, and 6 with only blind brothers or sisters. Of 21 persons reporting children, there were 2 reporting deaf children. In 22 cases parents were first cousins. Among males only 12 blind deaf-mutes had ever been married, and among females only 9.

Of the 96 reported in 1910, there were 55 who had had an education. Of these 30 had been to a special school for the deaf, 2 to a special school for the blind, 6 to schools for both the deaf and blind, and 2 to a school for the deaf and a school for the blind. Most of the remainder had had at least some education at a special school. Relatively few had been to schools for normal children. There were 17 who were able to read raised print. There were 5 able to use speech,

¹ Statistics here are from reports of Census Bureau for the several years specified, as already indicated. See in particular "The Blind in the United States: 1910," 1917, pp. 159, 282; "Deaf-Mutes in the United States: 1910," 1918, pp. 106, 176.

² Rebecca Mack and Corinne Rocheleau, "Those in Dark Silence," 1930; White House Conference on Child Health and Protection, "The Handicapped Child," 1933, pp. 34, 103. In Connecticut 16 blind deaf-mutes have been discovered. Report of Connecticut Board of Education of Blind, 1932, p. 128.

the others having communication by the sign language, finger spelling, and writing—either singly or in combination—or by miscellaneous methods, mostly motions. There were 5 (all males) who had an occupation—2 broom makers, 1 gardener, 1 chair caner, and 1 cabinet maker. (For 1 female an independent income was reported.) There were 3 self-supporting. Annual earnings did not exceed \$300 (of 2, \$200, and of 1, \$100).

Of deaf-blind persons enumerated in private investigations, about one-eighth are found in institutions of some kind.

NOTE TO CHAPTER XIV.—On the general condition of the blind, see White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 249; "The Handicapped Child," 1933, p. 48; "Addresses and Abstracts of Reports," 1930, p. 296; M. A. Phelps, "Contemporary Social Problems," 1932, p. 241; J. L. Gillin, "Social Pathology," 1933, p. 27; I. M. Heywood, "On Behalf of Blind," 1909; E. C. Johnson, "Blind of London," 1860; J. M. Ritchie, "Concerning Blind," 1930; J. P. Neary, "State and Blind," 1930; Ben Purse, "British Blind," 1928; Ben Purse, "Blind in Public Opinion," 1921; T. N. Kelynack, "Human Derelicts," 1914, p. 285; Henry Mayhew, "London Labor and London Poor," 1861, i., p. 340; iii., p. 154; D. O. Haswell, "Social Condition of Blind," 1874; T. R. Armitage, "Condition of Blind in Great Britain and Ireland," 1878; James Kerr, "Fundamentals of School Health," 1926, p. 535; E. D. MacGregor, "Present State of Blind," 1929; John Ford, "Problems of Social Policy," 1923, p. 440; R. S. French, "Education of Blind," 1924, p. 5; G. B. Mangold, "Problems of Child Welfare," 1924, p. 142; G. B. Mangold, "Social Pathology," 1932, pp. 252, 270; H. C. Hill, "Community Life and Civic Problems," 1922, p. 299; H. J. Wilson, Information with Regard to Institutions, Societies, and Classes for Blind in England and Wales, 1888, and subsequent years; G. M. Turner and W. Harris, Guide to Institutions and Charities for Blind in United Kingdom, 1884; National Institute for Blind, Year Book and Directory of Agencies for Blind (London), 1932; Minutes of Evidence before Royal Commission on Blind, Deaf and Dumb, etc., 1889; Report of Royal Commission on Blind, Deaf and Dumb, etc., 1889, pp. xl, 136; Report of Royal Commission on Welfare of Blind Persons (Manitoba and Saskatchewan), 1930; Report of Departmental Committee on Welfare of Blind (Parliament), 1917; Ministry of Health, Report of Advisory Committee on Welfare of Blind in England and Wales (Handbook), 1918, and subsequent years; League of Nations Health Organization, Report on Welfare of Blind, 1929; League of Nations Advisory Committee for Protection and Welfare of Young Persons ("Protection of Blind Children"), 1928; Transactions of College of Physicians (Philadelphia), 1897, p. 218; Illinois Institution Quarterly, viii., 1917, 4, Dec., p. 102; Green's Encyclopedia and Dictionary of Medicine and Surgery, 1906, Art. "Blind"; Encyclopedia Medica, 1915, ii., p. 237; Encyclopedia Americana, 1803, p. 556; Encyclopedia of Religion and Ethics, 1913, ii., p. 710; Encyclopedia of Social Sciences, 1930, ii., p. 587; Encyclopedia of Social Reform, 1910, p. 362; Bulletin of Massachusetts Department of Labor, no. 21, Feb., 1902; Social Work Year Book, 1929, p. 40; Report of Conference on Matters Relating to Blind (England), 1902, p. 178; Proceedings of International Conference on Blind (England), 1908, p. 262; 1911, p. 50; 1914, p. 450; Notes on Report of Jubilee Conference to Consider Condition of Blind (York, England), 1884; West of Scotland Branch of British Blind Association, "Plea for Blind," 1870; reports and publications of Scotch Advisory Committee on Welfare of Blind, Metropolitan and Adjacent Counties Associations for Blind, Northern Counties Association for Blind, Union of Counties Associations for Blind in England and Wales, etc.; reports and publications of National Institute for Blind (England); reports of Mission to Outdoor Blind (Glasgow); proceedings of conferences on blind in United States and Great Britain; census reports on blind in United States and Great Britain; reports of various social welfare agencies; *Canadian Child Welfare News*, Feb. 15, 1928; *Social Science Review and Journal of Sciences*, ii., 1864, p. 48; iii., 1865, p. 178; *Modern Review*, i., 1931, p. 394; *Asia*, xxxii., 1932, p. 162; *Christian Observer*, lxxiv., 1874, p. 375; *National Magazine*, xiv., 1863, p. 14; *World's Work* (England), x., 1907, p. 386; *Fortnightly Review*, xlv., 1886, p. 472; *Sunday Magazine*, 1894, p. 130; *Hospital Social Service*, xxiv., 1931, p. 62; *Laryngoscope*, xxix., 1929, p. 343; *International Medical Magazine*, vii., 1898, p. 167; *Lancet*, 1917, ii., p. 654, and *passim*; *Medical Times and Gazette*, 1862, i., p. 663; *British*

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(n. s.), 1906, p. 308; *Ladies Repository*, vii., 1847, p. 273; *Educator*, March, 1895; *Murray's Magazine*, v. 1889, p. 365; *Munsey's Magazine*, xxx., 1904, p. 739; *Success Magazine*, i., 1897, p. 40; *American Portrait Gallery*, 1855, p. 707; *Mentor*, i., 1891, pp. 46, 103, 171; iii., 1893, p. 46; iv., 1894, p. 209; *Religious Magazine*, vii., 1837, p. 347; *World Today*, liv., 1929, p. 243; *Christian Observer*, xlv., 1844, p. 409; *St. Nicholas*, xvi., 1889, pp. 746, 834; *Howitt's Journal*, ii., 1847, p. 226; *Catholic World*, i., 1865, p. 326; lxxvi., 1907, p. 57; *Good Words*, xxxvii., 1897, p. 272; *Quiver*, 1891, p. 669; *Harper's Bazaar*, xxix., 1896, p. 1148; *Wideawake*, xxvii., 1888, p. 77; *Mind*, iv., 1879, p. 149; *Juvenile Miscellany*, iv., 1828, p. 127; *Lend a Hand*, iii., 1888, p. 137; *Atlantic Monthly*, clxv., 1930, pp. 433, 604, 785; *American Annals of Education*, i., 1831, pp. 478, 530; *National Magazine*, xi., 1857, p. 27; *Educational Bi-Monthly*, ii., 1908, p. 452; *Home-Maker*, vii., 1892, p. 1001; *Pamphleteer*, vi., 1915, p. 333; *National Magazine*, xx., 1904, p. 668; *American Journal of Education*, iv., 1857, p. 383; *Sunday School Times*, lv., 1913, p. 595; *American Review of Reviews*, xxv., 1902, p. 435; *Scientific American*, Supp., lviii., 1904, p. 24102; *Kindergarten Magazine*, iv., 1897, p. 758; *Etude*, xlvi., 1928, p. 667; *The Defectives*, i., 1, March, 1905, p. 2; *Literary Digest*, xlvi., 1913, p. 876; lii., 1916, p. 1390; *New Yorker*, Jan. 25, 1930, p. 24; *American Magazine*, April, 1914, p. 72; March, 1927, p. 65; June, 1929, p. 44; *Journal of Abnormal and Social Psychology*, xxv., 1930, p. 133; xxvii., 1932, p. 389; *Chautauquan*, xliii., 1896, p. 672; *Popular Mechanics*, xxxvii., 1922, p. 13; *Illustrated American*, xi., 1892, p. 369; *Personality*, ii., 1928, p. 1; *Eugenical News*, xlii., 1928, pp. 156, 159; *Musican*, xxii., 1917, p. 303; *American Journal of Psychology*, iii., 1890, p. 293; iv., 1891, p. 248; *Ladies Home Journal*, April-Nov., 1902; Nov., 1921, p. 17; *Overland Monthly*, viii., 1886, pp. 355, 557; *Silent Worker* (New Jersey School for Deaf), Sept., 1894; Feb., 1897; Nov., 1907; *Charities and Commons*, ix., 1900, p. 550; *Outlook for Blind*, Sept., 1928, p. 14; *Teachers Forum*, Jan., 1931, pp. 2, 5 and *passim*; *Teacher of Blind*, Feb., 1924, p. 57.

CHAPTER XV

MARITAL CONDITION OF BLIND

EXTENT TO WHICH BLIND ARE MARRIED

The extent to which the blind are married may be considered in two aspects—in unions with partners who can see, and in unions with like sightless partners; that is, the extent to which there takes place marriage among the blind in general, and the extent to which there takes place marriage of the blind with the blind.

In the following table are given, for males and for females, the percentage distribution of the blind and of the general population fifteen years of age and over, according to their marital condition (single, married, widowed, and divorced), and the ratio of the blind per 1,000,000 of the general population (1910 and 1920.)¹

PERCENTAGE DISTRIBUTION AND RATIO OF BLIND ACCORDING TO MARITAL CONDITION

MARITAL CONDITION	PER CENT DISTRI- BUTION			RATIO OF BLIND per 1,000,000 OF GENERAL POPULATION	
	General Popu- lation (1920)	Blind		1910	1920
		1910	1920		
Total.....	MALES				
	100.0	100.0	100.0	936	752
	35.2	32.3	34.4	779	737
	64.8	67.7	65.6	1036	704
	59.4	48.5	45.1	769	573
	4.8	18.3	18.2	4219	2875
	0.6	1.0	2.3	2030	2715
	FEMALES				
	100.0	100.0	100.0	769	583
	27.4	32.2	35.9	756	770
Married, widowed, or divorced.....	72.6	67.8	64.1	773	518
	60.7	27.1	25.7	345	249
	11.2	40.0	37.2	3154	1961
	0.8	0.6	1.1	800	834

¹ Statistics in this chapter are, unless otherwise indicated, from reports of Census Bureau—"The Blind Population of the United States: 1910," 1917; "The Blind in the United States: 1910," 1918; "The Blind in the United States: 1920," 1927; "The Blind Population of the United States: 1920," 1928. See also "The Blind and the Deaf: 1900," 1906, p. 15. In Table XXVII in Appendix A are given the percentage distribution and the ratio of the blind per 1,000,000 by marital condition among the several race and nativity classes (1920).

For both blind males and blind females of marriageable age the proportion who are or have been married is a little under two-thirds (65.6 per cent and 64.1 per cent, respectively), the proportion for males being slightly the larger of the two.¹ With the general population the respective proportions who are or have been married are 64.8 per cent and 72.6 per cent. With males the proportions are almost the same for the blind and for the general population; with females the proportion is somewhat less for the blind. Marriage is thus less common with the female blind than with the male. For neither sex are the blind married by any means to the same extent as the general population. Because of the very great number of the blind in middle or advanced life, at a time when most persons have become married, the proportion for the blind in this respect should normally be much larger than is actually the case. If the proportion of married persons among the blind were as great as that proportion in the general population of the same age composition as the blind, the number of the blind married would be about one-fifth greater.² At the same time it is to be remembered that the great majority of blind persons having been married were married prior to the oncoming of their affliction, blindness, as already observed, being rather incident to the later years of life, and hence their marital condition is scarcely affected by the fact of their blindness. Moreover, a certain number of blind persons, especially males, are able to find a mate, most often from the ranks of those who can see. The opportunities for marriage among blind females, because of their generally more confined existence, are considerably more restricted than among blind males. A further reason for the relatively small number of blind females who have been married lies in the relatively more advanced age frequently attained by them, a circumstance that would serve to enlarge the proportion shown for those who have remained single. (The fact that females in the general population marry at an earlier age than males is offset to a certain extent by the further fact that with the blind population blindness occurs among females in a relatively greater degree in childhood and youth, or before the time of marrying.)

That neither blind males nor blind females usually remarry is indi-

¹ In Connecticut the percentage of blind males single is 29.1, married 44.6, widowed 24.0, and divorced (separated) 1.3. The respective percentages for females are 28.9, 33.0, 37.1, and 1.0. Report of Connecticut Board of Education of Blind, 1930, p. 116. In Wisconsin of the blind receiving pensions the percentage married is 37.8, single 45.1, widowed 22.5, and separated 2.3. Report of Wisconsin Board of Control, 1928, p. 52. See also Report of New York Commission for Blind, 1928, p. 29.

² Roughly computed by the finding of the percentage married, widowed, or divorced in the general population for certain large age groups, and the applying of it to the blind of the same age groupings. See "The Blind in the United States: 1910," 1918, p. 57.

cated by the high proportion widowed—18.2 per cent, or four times as great as for the general population, in the case of males, and 37.2 per cent, or over three times as great, in the case of females. Of blind females who have once been married, much less than half are so still. Probably very few blind widows remarry. With many of the blind their relatively greater age would of course operate to prevent a second marriage. With the female blind, moreover, the situation is largely reflected which exists among the population in general—widows as a rule are much less given to remarriage than widowers, and females, because of their generally earlier marrying age and greater longevity, are more often the survivors at the breaking by death of the marriage tie. The proportion divorced among the blind is considerably above the proportion in the general population, in the case of blind males being four times as great. Possibly blindness has of itself been a causative or contributory factor in bringing about the divorce. (When comparison is made between the number of the blind per 1,000,000 of the general population in the same marital groups, the high figures for the widowed and for the divorced among the blind become particularly striking.)¹

EXTENT ACCORDING TO AGE

In the following table is given the percentage for each marital group according to age among the blind and in the general population (1920).²

At all age periods the proportions married are lower, and after early and middle life the proportions widowed or divorced are higher, with the blind than with the general population. The disparity between the married for the general population and that for the blind is most pronounced at the earlier periods, at the ages when marriages are most often contracted. At the earliest age period the proportion for males in the population at large who have been married is over three times as great as the proportion with the blind, and for females more than ten times as great. In the remaining periods the ratio becomes less and less, and the gap between the proportion for the blind and that for the general population narrows, though it is never closed. The proportion of the blind still in the married state rapidly increases for males approximately up to the age of threescore, and for females

¹ Since 1910 there has been a small decrease in the proportion of the blind who are or have been married, but the proportion of divorced for both males and females has been doubled, the increase with the general population in this regard being much less. If blindness of itself has an effect upon divorce, this effect is apparently proving stronger with time.

² In Table XXVIII in Appendix A is given the ratio of the blind per 1,000,000 of general population according to age (1920).

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PERCENTAGE OF BLIND BY AGE ACCORDING TO MARITAL CONDITION

AGE AND CLASS OF POPULATION	PER CENT OF TOTAL									
	MALE					FEMALE				
	Single	Married, Widowed, or Divorced				Single	Married, Widowed, or Divorced			
		Total	Married	Widowed	Divorced		Total	Married	Widowed	Divorced
15 years and over:										
Total population.....	35.2	64.8	59.4	4.8	0.6	27.4	72.6	60.7	11.2	0.8
Blind population.....	34.4	65.6	45.1	18.2	2.3	35.9	64.1	25.7	37.2	1.1
15 to 19 years:										
Total population.....	97.9	2.1	2.1	...	..	87.1	12.9	12.6	0.3	0.1
Blind population.....	99.4	0.6	0.6	0.1	..	98.8	1.2	1.0	0.2	..
20 to 24 years:										
Total population.....	70.9	29.1	28.4	0.5	0.2	45.6	54.4	52.4	1.4	0.6
Blind population.....	93.9	6.1	5.6	0.5	...	94.7	5.3	4.4	0.7	0.1
25 to 29 years:										
Total population.....	39.5	60.5	58.8	1.1	0.5	23.1	76.9	73.4	2.6	0.9
Blind population.....	77.8	22.2	20.1	1.1	0.9	82.9	17.1	15.5	1.6	..
30 to 34 years:										
Total population.....	24.2	75.8	73.4	1.8	0.7	14.9	85.1	80.2	3.9	1.0
Blind population.....	67.5	32.5	28.1	1.5	2.9	70.4	29.6	25.8	2.9	1.0
35 to 44 years:										
Total population.....	16.2	83.8	80.0	3.0	0.9	11.4	88.6	80.3	7.2	1.1
Blind population.....	49.5	50.5	42.4	4.7	3.3	54.6	45.4	35.8	7.9	1.6
45 to 54 years:										
Total population.....	12.0	88.0	81.2	5.8	1.0	9.6	90.4	74.1	15.3	1.0
Blind population.....	34.1	65.9	53.5	9.0	3.4	35.7	64.3	44.4	17.8	2.1
55 to 64 years:										
Total population.....	9.8	90.2	78.1	11.2	1.0	8.4	91.6	61.3	29.6	0.8
Blind population.....	24.9	75.1	56.5	15.1	3.4	28.3	71.7	41.2	28.6	1.9
65 years and over:										
Total population.....	7.4	92.6	64.9	27.0	0.7	7.1	92.9	34.0	58.5	0.4
Blind population.....	10.6	89.4	52.7	35.0	1.7	13.1	86.9	20.4	65.6	0.9

up to an age about ten years less, there being a decline for both sexes after these respective periods. The proportion widowed among the blind shows an excess over that in the general population around the fortieth year. The proportion divorced among the blind passes that in the general population, in the case of males at a little under thirty and in the case of females near forty.

EXTENT ACCORDING TO AGE AT OCCURRENCE OF BLINDNESS

In the following table is given the percentage of the blind of both sexes by marital condition according to the age at the loss of sight (1920).

Here is indicated very clearly the extent to which blindness acts as a barrier to marriage. Among males and females alike marriage has taken place in direct ratio to the age at the loss of vision—that is, the later the age of this loss the greater is the proportion of those who have been married. Only one-fourth (25.2 per cent) of males and a little over one-fifth (21.8 per cent) of females whose sight was lost in childhood or youth, or under twenty, have been married, while

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PERCENTAGE OF BLIND BY MARITAL CONDITION ACCORDING TO AGE AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT OF TOTAL									
	MALE					FEMALE				
	Single	Married, Widowed, or Divorced				Single	Married, Widowed, or Divorced			
		Total	Married	Widowed	Divorced		Total	Married	Widowed	Divorced
Total.....	34.4	65.6	45.1	18.2	2.3	35.9	64.1	25.7	37.2	1.1
Under 20 years.....	74.8	25.2	20.6	3.8	0.8	78.2	21.8	14.5	6.8	0.4
Under 15 years.....	76.6	23.4	19.3	3.4	0.7	80.2	19.8	13.6	5.8	0.4
15 to 19 years.....	64.9	35.1	27.3	6.2	1.6	62.7	37.3	22.3	14.0	1.0
20 years or over.....	18.0	82.0	55.3	23.9	2.9	13.8	86.2	31.8	52.9	1.5
20 to 24 years.....	50.9	49.1	39.1	7.9	2.2	45.7	54.3	33.3	18.6	2.5
25 to 44 years.....	26.1	73.9	55.5	14.1	4.3	21.2	78.8	47.0	29.7	2.1
45 to 64 years.....	13.0	87.0	61.1	23.0	3.0	10.9	89.1	39.1	48.5	1.6
65 years or over.....	6.2	93.8	52.0	40.5	1.3	8.4	91.6	15.7	74.9	1.0
Age not reported.....	45.8	54.2	33.8	18.5	2.0	50.7	49.3	16.4	32.4	0.5

over four-fifths (82.0 per cent) of males and nearly nine-tenths (86.2 per cent) of females who lost sight in adult life, or at twenty years or over, have been married. Over nine-tenths of either sex (93.8 per cent for males and 91.6 per cent for females) who became blind in old age, or at sixty-five or over, have been married. Even though those losing sight at the earlier ages include some persons below the usual marrying age (which circumstance serves to reduce somewhat the proportion who might have been married), yet the situation is not greatly affected, as of blind persons who lost sight before twenty almost two-thirds have already passed that age and are at a time of life when marriage generally could have taken place.¹

The proportion who are widowed advances with each age period of the loss of vision, a condition perhaps merely reflecting the general increase of widowhood with advancing years of life. The proportion divorced is greatest among males for those losing sight in early middle life and among females for those losing it at the beginning of adult

¹ If the proportion of the blind who had been married and who had lost their sight under twenty years of age had been in correspondence with that of the general population which had been married, the former proportion would have been approximately two-thirds, instead of a little over one-fifth (for either sex)—a circumstance bringing out anew the barrier which blindness constitutes to marriage. The fact that among those losing sight under twenty males have a larger proportion who have been married than have females—a situation which is the reverse of that in the general population—is further indication that blindness affords less of a hindrance to marriage with males than with females. It also appears possible that, inasmuch as few marriages in general are contracted before fifteen years of age, nearly all those who lost sight before that age and had been married were married after the loss of sight; and that, in comparison with the general population (about 1 per cent for males and about 12 per cent for females), close to one-third of blind males and close to one-fifth of blind females losing sight from fifteen to nineteen had married prior to that time. See "The Blind in the United States: 1910," 1918, p. 95.

life. If divorce is influenced at all by blindness in either party, the influence is possibly more pronounced not long after its occurrence.

EXTENT OF MARRIAGE OF BLIND WITH BLIND

We now come to the question of the extent to which the blind marry among themselves. On this point we do not have at hand precise information. From what has just been said, it seems clear that the great majority of the blind who are or have been married have or have had partners with the sense of vision. In addition the statistics previously referred to, giving the number of the blind with both parents blind as 62 (in 1910, 31), may not be without value in furnishing us a hint as to the actual situation.¹ From direct inquiries made with respect to conditions in the several States, it would appear that there are in the United States several hundred blind couples (both partners blind at the time of marriage).²

The reasons for the relatively small number of marriages of the blind with the blind are several. In the first place, as we have noted, most persons now blind were in the possession of sight at the age when marriages are usually contracted. Again, opportunities for the association of unmarried blind persons of the opposite sexes are in a large number of cases but rarely afforded.³ Finally, there exists in many quarters a very strong sentiment against unions of the blind with the blind—a sentiment not confined to educators and friends of the blind, but extending to a definite portion of the blind themselves.⁴ This feeling, it should be remarked, does not arise so much out of fear of the possible effect upon the offspring of them, as out of the economic and social considerations involved in the marriage of blind couples. The practical difficulties in the way of most sightless couples, combined with the hardships imposed upon both—there

¹ See *ante*, pp. 51, 52.

² In the State of Maryland only one such instance is said to be known. Proceedings of American Association of Instructors of Blind, 1910, p. 111. In Connecticut 3 cases have been found. Report of Connecticut Board of Education of Blind, 1932, p. 14. Of ex-pupils of the Pennsylvania Institution 17.7 per cent are reported to be married, 4.9 per cent being married to blind persons. Publications of Pennsylvania Institution, no. 3, Jan., 1924, p. 19 ("What Can the Blind Do?"). See also Report, 1907, p. 16. Of 55 marriages of former pupils of the Missouri School for which record has been kept, 22 have been intermarriages. Bulletin of Missouri Board of Charities and Corrections, 1910, no. 3, p. 58. During the continuance of a special industrial home for the blind in Iowa, there were 5 blind couples who married from 1892 to 1899. Report of Iowa Board of Control, 1899, p. 522. See also Clarence Loeb, *op. cit.*, p. 23.

³ In the schools for the blind as a rule the mingling of pupils of opposite sexes is permitted only under careful supervision, in some an almost complete separation of the two being effected. In other organizations for the blind restrictions are often placed upon the meeting of such unmarried persons.

⁴ Among the associations of alumnae of certain schools there is an agreement that if one of their number marries a blind person, her name is to be dropped from the rolls.

not being a single "pair of windows" for the two—are so great that such marriages are generally regarded as deplorable.¹

The question of the marriages of the blind has connection with the matter of eugenics in but limited degree. This is for several reasons, to which reference has already been made: blindness being largely a defect of the relatively late years of life, the marriages of blind persons are usually contracted before the occurrence of their affliction; their marriages are for the most part with persons not blind, there being relatively few marriages of blind persons with other blind persons; disorders of hereditary influence which may cause blindness are of relatively restricted extent; the possible transmission of blindness through the operation of hereditary forces is not limited to blind parents, the larger issue being the existence of blind relatives in general.²

¹ On the matter of the intermarriage of the blind with the blind, see Proceedings of American Instructors of Blind, 1853, p. 25; 1882, p. 57; Report of Perkins Institution, 1874, p. 100; "Trimsharp's Account of Himself," 1873, p. 55; Proceedings of National Conference of Charities and Correction, 1879, p. 214; Proceedings of Minnesota Conference of Charities and Correction, 1899, p. 64; J. W. Welch, "Abilities and Achievements of Blind," 1905, p. 262; Report of Conference on Matters Relating to Blind (England), 1902, p. 234; R. S. French, "Education of Blind," 1924, p. 93; *Illinois Institution Quarterly*, x., 1919, 3, Sept., p. 85; *Beacon*, xiv., 1930, p. 186; *Outlook for Blind*, vi., 1913, p. 86; *St. Louis Medical Review*, lviii., 1909, p. 6; *Journal of Missouri State Medical Association*, xxv., 1928, p. 97; *American Journal of Medical Sciences*, lxv., 1873, p. 410; *Mentor*, ii., 1892, pp. 182, 352.

² See Chapter II.

CHAPTER XVI

EXTENT OF EDUCATION AMONG BLIND

EXTENT OF EDUCATION IN GENERAL

In the following table is given the percentage distribution of the blind (five years of age and over), and of males and females separately, and by race and nativity classes, according to the extent and character of the education received (1910 and 1920).¹

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO ATTENDANCE AT SCHOOL

CHARACTER OF EDUCATION	PER CENT DISTRIBUTION								
	1910			1920					
	Total	Male	Female	Total	Male	Female	Native White	Foreign-Born White	Negro Indian
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Having attended school.....	43.1	43.8	42.2	50.7	52.9	47.7	56.0	37.2	34.2
Having attended special school.....	23.2	23.4	23.0	31.4	32.0	30.6	36.5	15.9	18.2
Having attended other schools also.....	6.5	7.4	5.3	9.7	10.7	8.4	11.3	5.8	4.4
Common school only.....	4.0	4.5	3.2	6.0	6.6	5.2	7.0	3.4	2.7
High school or academy.....	0.9	1.0	0.8	1.1	1.1	1.0	1.3	0.5	0.4
University or college.....	0.5	0.7	0.3	0.8	1.0	0.6	1.0	0.4	0.2
Schools of miscellaneous character.....	0.4	0.4	0.5	0.9	0.9	0.9	1.0	0.6	0.3
Schools of character not reported.....	0.7	0.9	0.5	0.9	1.1	0.7	1.0	0.9	0.7
Having no other school.....	16.7	16.0	17.7	21.7	21.3	22.2	25.2	10.1	13.8
Reporting no other instruction.....	16.2	15.6	17.1	20.3	20.1	20.7	23.8	8.9	13.1
Reporting instruction at home.....	0.5	0.4	0.6	1.3	1.1	1.5	1.4	1.2	0.8
Not having attended special school.....	19.9	20.4	19.2	19.3	20.9	17.1	19.4	21.2	16.0
Having attended—									
Common school only.....	12.5	12.2	12.9	11.4	11.4	11.4	11.5	12.0	9.8
High school or academy.....	1.7	1.6	1.8	1.2	1.1	1.5	1.4	0.9	0.7
University or college.....	0.6	0.8	0.4	0.4	0.5	0.3	0.5	0.3	0.3
Schools of miscellaneous character.....	1.0	1.0	1.1	1.2	1.1	1.3	1.2	1.1	1.3
Schools of character not reported.....	4.1	4.8	3.2	5.1	6.8	2.6	4.9	7.0	3.8
Not having attended school.....	56.9	56.2	57.8	49.3	47.1	52.3	44.0	62.8	65.8
Reporting instruction at home.....	2.0	1.8	2.3	3.1	2.6	3.8	3.2	3.0	2.5
Reporting no instruction.....	54.9	54.4	55.5	46.2	44.6	48.5	40.8	59.9	63.3

Of the blind who have attended school, about three-fifths have received education at a special institution for the blind.² The pro-

¹ Sources of statistics are the same as those in preceding chapter.

² Statistical information with regard to the education of the blind is not complete—largely because of a misunderstanding of the inquiries upon the subject among a portion of those whose blindness came after the period of schooling, it being thought by some that

portion is not greater simply for the reason that a very large number of the blind lose sight after the age of schooling. Of those who have attended special institutions, two-thirds have received their education exclusively thereat. In addition, 4.4 per cent of the blind have had instruction in their homes, for the most part through some organized home teaching agency (occasional and unsystematic instruction not being included).

Not quite three-tenths of the blind have had some of their schooling at general schools, whether solely or in addition to schooling at special institutions for the blind. This general education has most often been confined to the common schools. A small proportion (2.3 per cent) have been to high school or academy, and an appreciable proportion (1.2 per cent) even to college or university. (For 2.1 per cent attendance has been at schools of miscellaneous character—schools for the deaf, schools for the feeble-minded, unclassified private schools, and certain professional schools.) Except in the case of those who have been to college or university, the proportion is always greater for those who have not attended a school for the blind, but only other schools, than for those who have attended both a school for the seeing and a school for the blind. The blind who have attended schools of both types embrace two groups—on the one hand, persons who, while in the possession of sight, had commenced their education with the seeing, but because of its loss had been compelled to resort to a special institution for the blind, and, on the other hand, but of smaller number, persons who took up work at an institution for the seeing, possibly of a professional or technical nature, after a course at a special institution for the blind.¹

The record of school attendance is slightly better for males than for females. The apparent difference between the sexes remains fairly constant for most of the various kinds of schools attended. The proportion having exclusive attendance at institutions for the blind is a trifle higher for females, doubtless in part because of the larger proportion of that sex who lose sight in early life, and in part because of the relatively greater economic or physical independence of males, with consequently fewer difficulties in attending general institutions.

reference was only to schools for the blind, and by others that reference was only to education after the coming of blindness. So far as has been possible from answers to other inquiries, proper correction has been made in the statistics. With special schools for the blind are included workshops, a small proportion of the blind having had some instruction thereat.

¹ School attendance with the blind seems in general to show improvement with time. The greatest improvement is found at the special institutions. This condition is due in no small part to their increased efforts to reach and bring in all blind children of school age, as well as to the effects of compulsory education laws. See *post*, pp. 380, 388.

Females are also afforded home instruction to a larger extent than males. Such instruction has always had special advantages for the former, often in fact being designed with their needs particularly in view.

As between different race and nativity groups, much the best record as to school attendance is that of native whites, with the poorest that of Indians. Foreign-born whites and Negroes have proportions not far apart. The proportions for these groups reflect in a measure the general extent of education and literacy among them (though with the foreign born the matter is affected by the smaller incidence of blindness in early life). The proportion is likewise highest for native whites in respect to attendance at the special institutions for the blind, whether alone or in addition to other schooling.¹

EXTENT ACCORDING TO AGE

In the following table is given the percentage distribution of the blind (five years of age or over) by age according to attendance at school (in condensed form) (1910 and 1920).

The best showing of all as to education is made by the blind whose age is from fifteen to nineteen; nine-tenths of the entire number of the blind of this age are or have been in attendance at school. The proportions, however, for the age periods just below and just above, are but little less. The proportion from five to nine is much smaller. The later age periods of life show a constant decrease with respect to school attendance. Very much the same order of the percentages is found with respect to attendance at a special school for the blind, whether in addition to attendance at a general school or not. With respect to attendance entirely in the general schools the effect is mostly the opposite, the proportions gradually increasing from the

¹ Of graduates of the Pennsylvania Institution 80.5 per cent have had some schooling with the seeing (all who had lost sight after five years of age); and 6.3 per cent, some instruction at home before entering school (all who had lost sight before five). Publications of Pennsylvania Institution, no. 3, 1924, p. 12. ("What Can the Blind Do?") Of the blind in California the extent of education, with the percentage in each case, is reported as follows: common school only, 25.7; attendance at high school, 12.6; completion of high school, 2.4; attendance at college, 4.0; education only in raised print, 12.8; still in school, 2.2; no instruction in raised print, 13.3; training in industry, 10.6; training in business, 4.0; trade, 3.7; farming, 4.2; professions, 2.7; laborers, 3.3 (Because of duplications, the percentages in some cases are really larger.) California Department of Social Welfare, "The Adult Blind of California," 1928, p. 6. In Ohio 25.2 per cent of the blind have been found to have attended a school for the blind; 70.6 per cent, a common school; and 5.1 per cent, a school of higher level. Report of Ohio Commission for Blind, 1908, p. 15. The extent of education among blind persons reported as undergoing industrial rehabilitation in 1928 (all blind after childhood), with the percentage in each case, is as follows: none, 7.5; first to sixth grade, 18.3; seventh to ninth grades, 23.3; high school, 39.2; advanced grades, 1.7; vocational, 3.3; unknown, 6.7. From information from the Federal Board of Vocational Education.

PERCENTAGE DISTRIBUTION OF BLIND BY AGE ACCORDING TO SCHOOL ATTENDANCE

CHARACTER OF EDUCATION	PER CENT DISTRIBUTION												
	1910		1920										
	Un- der 20 Years	20 Years and Over	Total	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 24 Years	25 to 44 Years	45 to 64 Years	65 Years and Over	Age Not Re- ported	Un- der 20 Years	20 Years and Over
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Having attended school.....	70.5	40.5	50.7	64.8	87.7	89.1	86.1	69.4	48.2	28.9	50.4	83.7	45.9
Having attended special school.....	62.8	19.3	31.4	62.4	83.8	84.3	77.8	52.2	24.1	5.5	34.8	70.7	24.3
Having attended other schools also.....	11.3	6.1	9.7	7.2	20.2	26.6	25.8	17.9	8.2	1.9	4.3	20.2	8.3
Having attended no other school.....	51.5	13.3	21.7	55.1	63.6	57.6	52.1	34.3	15.9	3.6	30.5	59.5	10.0
Not having attended special school.....	7.7	21.1	19.3	2.4	3.9	4.8	8.2	17.2	24.1	23.4	15.6	4.0	21.6
Not having attended school.....	29.5	59.5	49.3	35.2	12.3	10.9	13.9	30.6	51.8	71.1	49.6	16.3	54.1

earliest age period. The better showing of the younger blind in attendance at the special institutions and of the older at institutions for the seeing is to be explained by the circumstance that the former had lost sight at a time when admission into an institution for the blind was possible, whereas the latter had often lost sight after such school age, whatever education they have had having been with the seeing.¹

The reason for the relatively low record of the blind for school attendance at the earlier ages of school life and for the relatively high proportions at later ages is that the school period with the blind is somewhat above that for ordinary children. Many at the earlier age have as yet not started their schooling, while many at the older age have remained at school up to a time when normal children have largely ceased attendance, a great portion of whom have entered industrial life. Up to within a year or two of high school age children who can see have somewhat the better record as to school attendance; after that time blind children have a better, and an increasingly better, record. The school career of blind children is of greater length on the average than that of children with sight.²

EXTENT ACCORDING TO AGE AT OCCURRENCE OF BLINDNESS

In the following table is given the percentage distribution of the blind five years of age and over by age at loss of sight according to attendance at school (1910 and 1920).

The highest proportion of the blind attending school is for those losing sight between ten and fourteen years of age, though the proportions are only slightly less when vision was lost earlier. When vision was lost at later periods the proportions steadily decrease. A much greater disparity exists with respect to attendance at the special schools for the blind between those losing sight in early life and those losing sight in adult life. In this case the proportion falls rapidly from the start. This situation is even more pronounced as to exclusive attendance at these schools. As regards attendance at special schools for the blind and also at general schools, the proportion increases to the period ten to fourteen, and decreases thereafter. As regards attendance at general schools alone, the proportion reaches its crest in

¹ There seems to be an improved attendance since 1910 at the special schools for blind children. There is a rather notable increase in the proportion of the blind under twenty who have attended other schools besides their own special schools, the proportion in fact having almost doubled. This may mean that the blind are having more and more recourse to other schools to complete their education or for professional training, though the increase is due in some degree to the constantly enlarging numbers of the blind in cities who are attending special day schools.

² See *post*, pp. 380, 384.

early adult life. Home instruction is naturally the more extensive among persons whose blindness came on in adult life.¹

¹Increase is indicated for all types of schools except attendance at general schools exclusively, a condition which would seem to show an increasing tendency among the blind, for at least a part of their education, to use the schools created especially for them. For those losing sight in adult life the proportions who are benefiting by home teaching have greatly increased.

CHAPTER XVII

ECONOMIC CONDITION OF BLIND

EXTENT TO WHICH BLIND ARE WAGE-EARNERS

The next matter to be examined in connection with the condition of the blind is that of their economic standing. It is here that there lies the most important and the most severe consequence to society from the existence of blindness in its midst. At the outset the question arises in what degree it will be possible for those suffering under that infirmity to become participants in the customary gainful occupations of men, and capable of constituting a self-supporting force among them. Through the want of the sense of sight human beings are deprived of such an essential physical faculty in the ordinary pursuits of life or in the general field of economic endeavor that those so affected must perforce to a very large extent remain outside the ranks of industrial breadwinners, or pass into them under an almost overpowering handicap, with the result that they are rendered largely a dependent element of the community.

In the vast number of the occupations of men vision constitutes such an indispensable qualification that to those persons bereft of it a more or less effectual bar is imposed upon entry into them, very many being closed altogether. Thus many vocations the blind man finds himself necessarily precluded entirely from pursuing, while in the remainder he discovers the field so narrowly circumscribed that but the slightest opening is afforded him. In other words, blindness, if not totally disabling for gainful occupations those whom it afflicts, lays upon them such a heavy hand that the range found left is exceedingly contracted. In consequence of all this the earning power of the blind becomes highly restricted, and their task of securing remunerative employment which will support them proves an extremely difficult one, if not indeed an insuperable one. If as a result they fail, in whole or in part, to meet the requirements for the successful carrying on of business or industry, they must turn to other sources for their sustenance.

Such is the essential situation confronting that portion of the community which is without eyesight. How far in actual practice they are found able to enter the ranks of the wage-earners of the country and to become a self-sustaining part of the population, or in

lieu thereof, to what means they must look for their support—this we are now to consider.¹

In the following table is shown for both males and females, and for the several race and nativity groups, the percentage of the blind ten years of age and over in the United States who are gainfully employed as compared with the general population (1910 and 1920).²

PERCENTAGE OF BLIND GAINFULLY OCCUPIED

RACE AND NATIVITY	PER CENT OF TOTAL					
	BLIND				GENERAL POPULATION (1920)	
	1910		1920		Male	Female
	Male	Female	Male	Female		
Total.....	24.5	5.8	25.4	7.8	78.2	21.1
White.....	25.1	5.9	25.6	7.9	77.9	19.2
Native.....	26.7	6.2	26.8	8.5	75.1	19.3
Foreign born.....	18.9	5.0	20.8	5.0	89.3	18.4
Negro.....	21.3	4.7	24.3	6.5	81.1	38.9
Indian.....	14.9	4.8	12.8	4.0	58.4	11.5

It appears that a material proportion of the blind are industrially employed, and are in receipt of wages or other income in regular order. Despite their affliction, these do participate in the occupations of men, and are able to provide for themselves economically to a greater or less extent. In large part such persons are to be regarded as the "cream" among the blind, otherwise of full physical strength or vigor, with mental powers quite undiminished, and in some cases possibly above the common average, and with all the faculties which qualify one for economic usefulness or business success—initiative, energy, resourcefulness, and the like.

Of blind males, ten years of age or over, one-fourth (25.4 per cent) are gainfully employed, a proportion not quite one-third of that for the general population (78.2 per cent). Among females the proportion is less than one-twelfth (7.8 per cent), a proportion a little over one-third of that for the general population (21.1 per cent). (Of all the blind gainfully employed 17.8 per cent are females, as against 20.5 per cent for the general population.)

In comparing the proportion of the blind and of the general population gainfully occupied, it must be borne in mind that a very

¹ On the industrial possibilities of the blind, see also Chapters XLII–XLVI.

² The statistics in this chapter are, unless otherwise indicated, from reports of Census Bureau—"The Blind in the United States: 1920," 1923; "The Blind Population of the United States: 1920," 1928; "The Blind Population of the United States: 1910," 1915; "The Blind in the United States: 1910," 1917. They relate only to persons making special report—23,251 males and 16,385 females (1920).

great number of the blind are in advanced life, too old in any event for gainful employment. A certain proportion of the blind suffer in addition from other handicaps, or are otherwise physically or mentally disqualified.¹ If these be removed from our calculations, the difference between the proportions for each group is considerably reduced. On the other hand, as will appear later, the extent to which the blind so reported are actually engaged in gainful employment is greatly limited, with not a few this employment being little more than nominal.²

Among blind males native whites present the best showing (26.8 per cent) as to gainful occupation in relation to the other groups, a showing all the more significant for the reason that in the general population this group is behind all the others save the Indians. Negroes come next, with a proportion (24.3 per cent) relatively much less than that in the general population. Foreign-born whites follow (20.8 per cent), though in the general population their proportion is considerably the highest of all. The low proportion for Indians (12.8 per cent) is in keeping with their low proportion in the general population. The relatively high proportion for native whites among the blind is doubtless due in part at least to their more extensive participation in agriculture, in which occupation many of the blind ostensibly remain after the loss of sight—besides better vocational provision and facilities in general.

Among blind females the ranking is much the same, though for Negroes, instead of there being the excessive proportion as in the case of the general population, the proportion with the blind remains but normal, an indication of the restriction which blindness imposes upon participation in economic activities even among this group.³

GENERAL OCCUPATIONS OF BLIND

In the following table is given the percentage distribution of the blind and of the population at large in the several general occupations (1910 and 1920).

Here some light may be thrown upon the relative extent of the handicap which blindness imposes in the several chief industrial pursuits. In manufacturing and mechanical industries are much the largest proportions of the blind who are gainfully employed (43.1 per cent).

¹ See *post*, p. 491.

² On the possible number of the blind debarred from gainful occupation, see also *post*, pp. 243, 290.

³ There is a slight gain in the proportion of blind males gainfully employed in 1920 over 1910, except among the Indians. The most considerable gain is made among Negroes. Among females the general gain is somewhat larger than among males. Possibly the increase for blind females only reflects to a certain extent the increase in gainful occupation for females in general.

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO GENERAL OCCUPATION

OCCUPATION	PER CENT DISTRIBUTION								
	BLIND						GENERAL POPULATION (1920)		
	1910			1920			Total	Male	Female
	Total	Male	Female	Total	Male	Female			
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture.....	18.9	20.8	7.3	13.2	14.6	6.6	26.3	29.8	12.7
Extraction of minerals.....	0.3	0.3	....	0.2	0.2	....	2.6	3.3	....
Manufacturing and mechanical industries.....	30.1	27.9	43.6	43.1	41.8	48.8	30.8	32.9	22.6
Transportation.....	1.4	1.4	1.3	1.5	1.6	1.4	7.4	8.6	2.5
Trade.....	22.3	24.8	7.6	17.6	20.8	2.7	10.2	10.8	7.8
Public service.....	0.3	0.3	0.1	0.5	0.5	0.5	1.9	2.3	0.3
Professional service.....	15.7	14.6	22.5	14.0	12.7	20.0	5.2	3.4	10.9
Domestic and personal service.....	7.4	6.2	14.4	5.5	3.8	13.2	8.2	3.7	25.6
Clerical occupations.....	....	....	....	3.9	3.5	5.8	7.5	5.1	16.7
Unclassifiable.....	3.6	3.7	3.1	6.6	6.5	0.9	....	....	....

While these are the callings which have the largest representation in the population as a whole, in the latter case the lead is by no means so great as with the blind. The next highest proportion is in trade, the proportion with the blind (17.6 per cent) being also considerably larger than with the general population. In professional service, with the third highest proportion (14.0 per cent), the relative excess for the blind is greatest of all, the proportion with them being nearly three times as high as with the general population. In all the remaining groups the proportion for the blind is less than for the general population. In agriculture the proportion for the former (13.2 per cent) is about one-half that for the latter. In domestic and personal service the proportion (5.5 per cent) is considerably smaller. In clerical occupations the proportion (3.9 per cent) is also about one-half. In transportation pursuits the proportion engaged (1.5 per cent) is only about one-fifth of that with the general population. The representation of the blind in this class of occupations is relatively the least of all, with the exception of extraction of minerals, in which occupation are reported very few of the blind (0.2 per cent). In public service the proportion for the blind (0.5 per cent) is about one-fourth of that for the population in general.

The large proportion of the blind in manufacturing and mechanical industries as compared with other pursuits is due both to the relatively lesser difficulties to be encountered therein, and to the inclusion under that general head of certain processes, often of simple handicraft character, to which the blind have been able in limited measure to turn their hands. The large proportion in trade is somewhat similarly explained—the obstacles of a practical nature being less pro-

nounced, and available openings being more likely to manifest themselves here than in other fields. The very high proportion of the blind in professional service is accounted for in no small part by the considerable number of blind musicians and teachers of music, representing callings to which the blind have been much inclined, and by the considerable number of blind persons in the various professional callings who have found it possible to continue their activities therein in some degree after the onset of their blindness.

As between the sexes, the proportion of male blind is relatively greater in agriculture, extraction of minerals, transportation, and trade; and of female blind, in the remaining occupations save public service (in which the proportions are equal). These are the same occupations, respectively, in which either sex predominates in the general population, except manufacturing and mechanical occupations and public service, in which males have the larger proportions. The ratios between the proportions for males and for females in the two population groups, however, present some decided differences.¹

In the following table is given the percentage distribution of the blind of both sexes combined by general occupation groups for the several race and nativity classes (1920).

There are larger proportions for whites than for Negroes in all of the major occupation groups except extraction of minerals, professional service, and domestic and personal service. Only in the case of domestic and personal service do the proportions for whites and for Negroes among the blind and in the general population correspond, the handicap of blindness being fairly equal for the two races. In agriculture the representation of Negroes among the blind is only about two-thirds that of the whites, though in the general population the proportion for Negroes is relatively almost double that of the whites. In transportation and in public service the differences in the proportions resulting from the absence of vision are more than twice as great with Negroes as with whites. On the other hand, in manufacturing and mechanical industries, while among whites the proportion is not very much greater for the blind than for the general population, among Negroes it is more than double. In trade the proportion for the blind has also increased somewhat with whites, but with Negroes it has increased fivefold. In professional service the proportion for the blind is with whites not quite three times, but with Negroes over ten times, that for the general population. In

¹ Since 1910 there have been increases in the proportions for the blind in manufacturing and mechanical occupations, transportation, public service, and probably clerical occupations.

clerical occupations the proportion among whites is less than one-half because of blindness, but among Negroes the proportion has, notwithstanding, grown threefold. In extraction of minerals the reduction in the proportion consequent upon the loss of sight is several times as great among whites as among Negroes.

The variations in the respective proportions for the two races between the blind population and the population as a whole are ascribable to several factors: differences in educational advantages; differences in amount of vocational provision, including industrial guidance by the special agencies for the blind; and the relative industrial opportunities afforded. In agriculture the situation is largely due to the considerable number of white blind who on the occurrence of their affliction ostensibly continue in their accustomed occupation. The high proportion of white blind in transportation is chiefly attributable to their practically exclusive entry into one form of the occupations so classed, namely, telephone operating. In manufacturing and mechanical industries and trade the situation as regards Negroes is in some degree explained by the special openings provided in these fields, often along lines regarded as particularly suited for the blind and for which vocational training is afforded in the schools and workshops, blind Negroes here being for the most part in employments of an unskilled and casual nature, and (as classified under trade) in occupations not infrequently of a semi-mendicant kind. The last observation is applicable also to a portion of the Negroes engaged in domestic and personal service and in clerical occupations. The abnormal proportion of blind Negroes in professional service is in no small part accounted for by the large number reported as clergymen.

As between native and foreign-born blind, larger proportions are found for the former group in all classes of occupations except manufacturing and mechanical industries, trade, and domestic and personal service. The differences in the proportions for native and foreign born in the several occupations, however, are not marked, save in the case of transportation and in clerical occupations, the proportion for natives in the former occupation being almost three times as great as for the foreign born and in the latter twice as great. The differences between the two groups among the blind on the whole reflect to but limited extent the differences between the two groups in the population at large. Only in public service is a ratio corresponding to that between the native white and foreign-born white in the general population maintained among the blind. In clerical occupations the proportion with the blind population is only about twice as great for natives as for the foreign born, and in agriculture, public service, and

trade the proportions are nearly alike. In transportation the proportion for the native whites is nearly three times that for the foreign-born whites. In extraction of minerals the proportion in the blind population for the native born is double that for the foreign born. In manufacturing and mechanical occupations the proportion for the foreign born is only slightly greater than for the native.

Native blind persons may be expected to have the better representation in those callings for which special training is given in the schools for the blind, this training being possible in much less degree for the foreign born because of the later occurrence of their affliction, generally after the period of schooling. This is an especially important consideration with respect to the relatively larger proportion of natives in manufacturing and mechanical industries and in transportation; piano tuning particularly as an occupation of the former type, and telephone operating as an occupation of the latter type, are engaged in mainly by natives, both occupations being very generally taught in the special schools. (The situation with respect to the foreign born is also considerably affected by their large urban residence.)

SPECIFIC OCCUPATIONS OF BLIND

In the following table is given the percentage distribution of the blind gainfully employed in occupations in which not less than 0.5 per cent of either sex are engaged, together with the percentage for the general population (1910 and 1920).¹

On the face of these returns, the blind appear to be engaged in a variety of occupations, in a few of which they may be said to be fairly well represented. On closer analysis, however, their field of employment is found to be a very constricted one. Except only in certain lines, the range is seen to be small; while some industries are scarcely at all comprehended. Even whatever favorable showing is made is tempered by several circumstances. It is possible, in the first place, that a not inappreciable proportion of those listed in particular occupations are really border-line cases, there being a remnant of sight possessed, which has proved of no slight help. It may next be assumed that a number of those recorded have remained in the same occupations in which they were engaged at the time that they became blind, it having proved feasible to continue thereat by their own efforts, together with the assistance of their families and friends. Perhaps a more important consideration lies in the likelihood that some were enumerated as in a given activity when in fact this was the one followed before the oncoming of the affliction, and which

¹ On explanations as to certain occupations, see *ante*, p. 34.

PERCENTAGE DISTRIBUTION OF BLIND GAINFULLY EMPLOYED ACCORDING TO
SPECIFIC OCCUPATION

OCCUPATION	PER CENT DISTRIBUTION		
	BLIND		GENERAL POPULATION (1920)
	1910	1920	
Males	100.0	100.0	100.0
Broom makers	11.2	14.0	....
Farmers	18.3	11.2	18.7
Retail dealers	8.8	9.1	3.7
Piano tuners	6.1	7.6	....
Musicians and teachers of music	8.9	6.6	0.2
Chair caners	4.7	6.4	....
Hucksters and peddlers	6.5	5.3	0.1
Laborers, building and general	2.2	3.4	1.8
Agents and canvassers	3.7	2.8	0.4
Agricultural laborers	2.3	2.3	10.2
Newspaper carriers and news dealers	2.3	2.1	0.1
Clerks and salesmen	0.9	1.9	3.2
Basket workers	0.9	1.7	....
Clergymen	2.7	1.5	0.4
Real estate and insurance agents	1.1	1.2	0.8
School teachers	0.9	1.2	0.4
Carpet and rug makers	0.6	1.0	....
Weavers	0.3	0.9	....
Wood sawyers and woodchoppers	3.5	0.9	....
Manufacturers and managers	0.6	0.8	1.5
Waiters and servants	0.4	0.7	1.1
Telephone operatives	0.5	0.6	....
Lawyers and judges	0.5	0.6	0.4
Laundry workers	0.5	0.5	0.2
Authors, editors, and librarians	0.3	0.5	0.1
All other and unclassifiable	11.4	15.2	56.6
Females	100.0	100.0	100.0
Seamstresses and fancy workers	13.8	20.4	2.8
Musicians and teachers of music	15.6	9.4	0.9
Chair caners	4.7	7.5	....
School teachers	3.8	6.5	7.5
Waitresses and servants	3.5	4.8	13.2
Basket workers	1.6	4.6	....
Farmers	6.2	4.3	3.2
Laundry workers	5.0	3.5	5.5
Weavers	1.8	3.4	....
Stenographers . . . . .	....	3.3	6.6
Carpet and rug makers	1.0	2.8	....
Agents and canvassers	3.8	1.8	0.2
Boarding and lodging house keepers	1.9	1.6	1.3
Agricultural laborers	1.0	1.4	9.4
Telephone operatives	1.3	1.4	2.1
Retail dealers	1.5	1.1	0.9
Authors, editors, and librarians	1.2	1.0	0.3
Semi-skilled operatives in printing	0.4	0.9	0.5
Broom makers	1.2	0.9	....
Hucksters and peddlers	1.5	0.7	....
Clerks (except in stores) . . . . .	....	0.6	5.5
Practical nurses and midwives . . . . .	....	0.5	1.6
Laborers, building and general . . . . .	....	0.5	0.2
All other and unclassifiable	28.3	17.1	38.4

has subsequently been practically if not entirely given up. Finally, only a part, probably much the smaller part, of the blind reported as industrially engaged are to be regarded as earning their own livelihood, the occupations of a very considerable number being hardly more than nominal—a matter to which attention is later to be given.

The blind are found to cluster rather heavily in certain particular callings. Of all the male blind listed, nearly three-fifths (58.4 per cent) are found in seven occupations, each having more than 5 per cent of all gainfully employed. These are broom making, farming, retail dealing, piano tuning, playing and teaching of music, chair caning, and huckstering and peddling. In fourteen occupations, each having 1.5 per cent or more, are three-fourths (74.1 per cent) of the male blind. The additional ones include the occupations of general laborers, agents and canvassers, agricultural laborers, newspaper carriers and news dealers, clerks and salesmen in stores, basket workers, and clergymen. In twenty-seven occupations, none having less than 0.5 per cent, are found all but about one-sixth (15.2 per cent) of the male blind.

The occupation which draws a larger number of blind males than any other is broom making, a trade generally looked upon as peculiarly suitable for the blind. It is often given to them as their first industrial effort; to men learning a new pursuit it is offered more frequently than any other. In it are over one-eighth (14.0 per cent) of the male blind who are gainfully employed. (Broom makers, as well as persons engaged in some other trades regarded as particularly adapted for the blind, often carry on their industry in special shops created for the purpose of aiding the blind.)

The occupation having the next largest numerical representation is farming, with 11.2 per cent. Its position is probably due to two things. First, farmers represent the largest occupational class in the population as a whole, and it is but natural that a high proportion should be found among the blind. It is quite possibly the case, secondly, that many are enumerated as farmers, when in fact farming was the occupation engaged in prior to the oncoming of blindness, active participation in it thereafter being limited, extending little beyond general oversight and direction.¹

Retail dealers—including grocers (1.1 per cent), cigar and tobacco dealers (0.7 per cent), dealers in music and musical instruments (0.3 per cent), and general store dealers (0.3 per cent)—comprise 9.1 per cent of the male blind gainfully occupied. Doubtless many

¹ The proportion of farmers would perhaps be greater still but for the belief of some that inquiries had reference only to their ability to do actual physical work on the farm.

have continued in this occupation also after the loss of vision, the enterprises usually being small, with little outlay of capital, and valuable assistance in their conduct being rendered by members of one's family. If newspaper carriers and news dealers are added, the total proportion of retail dealers is 13.6 per cent—in which case this group is only a little below broom makers. If other forms of trade, such as real estate and insurance, or huckstering and peddling, or work of clerks and salesmen, are embraced, this form of employment takes first place.

In piano tuning, long recognized as an occupation peculiarly adapted for the blind, 7.6 per cent are found. The playing and teaching of music, a kindred occupation, and regarded as no less desirable for the blind, follows with 6.6 per cent. Among the musicians reported, however, are included both high-grade performers and mere street performers. Piano tuners and musicians together comprise over one-eighth (14.2 per cent) of all male blind persons gainfully occupied—thus ranking ahead of all other single occupations. (If dealers in music and musical instruments are added, the proportion of blind males having music in some form as a vocation becomes 14.5 per cent.)

Chair caning, possibly looked upon as a manual trade next in importance to broom making, engages 6.4 per cent of the male blind. To huckstering and peddling, often hardly more than the purveying of certain small articles, as pencils, matches, shoestrings, etc. on the street or from house to house, and sometimes amounting to actual begging, are credited 5.3 per cent. General laborers (3.4 per cent) and agricultural laborers (2.3 per cent) are both relatively numerous among the blind for the same reason as are farmers. Among the former are some doing various odd jobs; among the latter are some who are at times engaged for such tasks as the husking of corn. Agents and canvassers (2.8 per cent) include some persons who have only occasional employment thus. Newspaper carriers and news dealers (2.1 per cent) are really engaged in one form of retail dealing. In a not dissimilar occupation are clerks and salesmen (1.9 per cent). Basket workers (1.7 per cent) are engaged in another of the special occupations of the blind. Clergymen (1.5 per cent) are in a calling that has always been open to blind persons, though a considerable proportion of blind clergymen are apt to be without settled pastorates, acting rather as supplies from time to time.

The remaining occupations listed are those of real estate and insurance agents (1.2 per cent), school teachers (1.2 per cent), carpet and rug makers (1.0 per cent), weavers (0.9 per cent), wood sawyers and woodchoppers (0.9 per cent), manufacturers and others in man-

agerial positions (0.8 per cent), waiters and servants (0.7 per cent), telephone operatives (0.6 per cent), lawyers and judges (0.6 per cent), laundry workers (0.5 per cent), and authors, editors, and librarians, or general literary workers (0.5 per cent).¹

Occupations in which from 0.4 per cent to 0.2 per cent of the male blind are engaged are those of boarding and lodging house keepers, physicians and others in the medical profession, public entertainers, tobacco workers, hammock and net makers, clerks (not in stores), semi-skilled operatives in printing, janitors and sextons, bankers and persons in kindred occupations, stenographers, commercial travelers, and drivers and teamsters.

If we examine the occupations in which there is a heavy excess in the proportions for the blind over those for the general population, we may discover occupations which have a special importance for the blind, and which may be said to have a special attraction or fitness, relatively speaking, for them. These occupations are discovered to be broom making, piano tuning, performing and teaching of music, chair caning, carpet and rug making, weaving, and basket working. In nearly all these occupations the proportions for the general population are insignificant, being less than 0.1 per cent except in the case of musicians and music teachers, and weavers. The occupations specified have been regarded as particularly appropriate for the blind, and more or less specialized instruction in them has been afforded at the special schools and workshops for this class. Such occupations as broom making, chair caning, carpet and rug making, and basket working (and hammock and net making) are the ones mostly carried on in the special workshops. They embrace over one-fourth (27.3 per cent) of the blind gainfully employed.

There are likewise certain occupations rather in the general field of employment which are apparently adapted to some extent for the blind, and to which they have resorted in proportions notably in excess of the proportions for the population at large. These are mainly small business ventures such as those of retail dealers, hucksters and peddlers (in general, an undesirable calling), agents and canvassers, newspaper carriers and dealers, and real estate and insurance agents; such pursuits as that of telephone operatives; professional callings such as those of clergymen, school teachers, lawyers, and literary workers; and general unskilled work such as that of general laborers, wood sawyers and woodchoppers, and laundry workers. Some of

¹ In 1910 of male blind gainfully employed, 0.6 per cent were also listed as mattress makers, 0.5 per cent as poultry raisers (separately from farmers in general), and 0.2 per cent as organ grinders.

the occupations of this type have in fact appeared so promising as pursuits for the blind that some degree of special attention is being given to them in the vocational training of the sightless. This is particularly true of certain commercial and clerical callings, including the conducting of small-scale mercantile or other business undertakings, salesmanship, stenography, and telephone operating, and limited agricultural enterprises like poultry raising.¹

Some of the occupations of the blind of a general nature, especially those involving selling processes, like retail dealing, or like keeping of boarding or lodging houses, are to some extent carried on as a continuation of callings engaged in prior to the loss of sight, and with more or less assistance of family or others. Such is also the case, but in less degree, with some occupations of a professional nature. Certain pursuits, as those of agents and canvassers and of clergymen, general and agricultural laborers, and wood sawyers and woodchoppers, are followed in more or less desultory fashion, those so engaged often having but intermittent or casual employment.²

The range of occupations open to blind females is much narrower than with blind males. The same considerations which put limitations upon the extent to which blind males are actually engaged in gainful occupation are applicable to blind females as well, perhaps with somewhat greater force. With respect to the work of blind females in general it is to be remembered that an appreciable proportion not reported as gainfully employed are in fact persons living in their own homes and engaged to a greater or less extent in the performance of household tasks.³

The one occupation which easily leads all others is that of seamstresses and fancy workers (not in factories), or plain and fancy

¹ Practically all the male blind in manufacturing and mechanical industries, except those listed as general laborers, are technically designated semi-skilled operatives, though as a matter of fact the occupations in which they are engaged are of a relatively simple nature, demanding but little real skill. Of the male blind in transportation, 40.2 per cent are telephone operatives. Of those in trade, 43.8 per cent are retail dealers, 25.3 per cent hucksters and peddlers, and 10.3 per cent newspaper carriers and news dealers. Of those in clerical occupations, 79.7 per cent are agents and canvassers. Of those in professional service, 51.5 per cent are musicians and teachers of music, and 12.0 per cent clergymen.

² Compared with 1910, there have been moderate increases in the proportions of the male blind gainfully employed as broom makers, retail dealers, chair caners, general laborers, real estate and insurance agents, school teachers, manufacturers, waiters and servants, telephone operatives, lawyers, and literary workers, and also more pronounced increases among clerks and salesmen, basket workers, carpet and rug makers, and weavers. Piano tuning shows a certain increase, but music playing and music teaching a decrease. The most notable decrease is in the case of wood sawyers and woodchoppers. On the whole, but with a few exceptions, the gains seem to be rather along the lines to which increasing attention is being given in the special schools in the way of training and preparation of the blind.

³ In Connecticut of women gainfully employed, 84.3 per cent are listed as housewives. Report of Connecticut Board of Education of Blind, 1930, p. 118.

sewing, this occupation alone having one-fifth (20.4 per cent) of the total gainfully employed. Most of these persons are more or less irregularly occupied in their own homes. In seven occupations are embraced almost three-fifths (57.5 per cent) of the female blind—those of seamstresses and fancy workers, musicians and teachers of music (9.4 per cent), chair caners (7.5 per cent), school teachers (6.5 per cent), waitresses and servants (4.8 per cent), basket workers (4.6 per cent), and farmers (4.3 per cent). In eleven occupations there are nearly three-fourths (70.5 per cent), the four additional ones being those of laundry workers (3.5 per cent), weavers (3.4 per cent), stenographers (3.3 per cent), and carpet and rug makers (2.8 per cent). In the twenty-three occupations, each having at least 0.5 per cent, there are all but 17.1 per cent, including, besides those already named, agents and canvassers (1.8 per cent), boarding and lodging house keepers (1.6 per cent), agricultural laborers (1.4 per cent), telephone operatives (1.4 per cent), retail dealers (1.1 per cent), literary workers (1.0 per cent), broom makers (0.9 per cent), semi-skilled operatives in printing (0.9 per cent), hucksters and peddlers (0.7 per cent), clerks (not in stores) (0.6 per cent), practical nurses and midwives (0.5 per cent), and general laborers (0.5 per cent).¹

Female blind persons are found to be fairly well represented in the occupations which have been regarded as especially suited for the blind, and for which special vocational training is provided—plain and fancy sewing, playing and teaching of music, chair caning, basket working, weaving, carpet and rug making, and broom making. Some of these represent handicraft processes engaged in at home, and taught possibly through special home instruction. (There are 19.2 per cent in occupations which characterize the special shops—some being engaged thereat in their homes.) Needle trades in particular are occupations to which blind women rather readily turn. Other occupations of a more general character, in which the proportion for the blind is larger than for the population at large are farming (probably in most cases as owners or assistants), the work of agents or canvassers, boarding-house keeping, retail dealing, literary work, semi-skilled labor in printing, huckstering and peddling, and general labor.²

¹ Of blind females in manufacturing and mechanical industries, 41.8 per cent are seamstresses and fancy workers. Of those in transportation, all are telephone operatives. Of those in clerical occupations, 56.8 per cent are stenographers. Of those in professional service, 32.3 per cent are school teachers.

² The most notable increases since 1910 have been in plain and fancy sewing, chair caning, school teaching, basket working, weaving, stenography, carpet and rug making, semi-skilled labor in printing, and general labor. Less notable increases are in the work of waitresses and servants, agricultural laborers, and telephone operatives. The most significant increase of all appears in the case of stenography, an occupation to which special attention has been given of late years, though a part of this increase may be attributed to

In the following table is given the percentage distribution of the blind, and of males and females separately, and of the totally blind and the partially blind separately, as found for 2483 blind persons in the United States in an occupational register maintained by the American Foundation for the Blind from 1926 to 1930.¹

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO OCCUPATION

OCCUPATION	PER CENT DISTRIBUTION				
	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Totally Blind</i>	<i>Partially Blind</i>
Total.....	100.0	100.0	100.0	100.0	100.0
Agriculture.....	2.5	3.0	0.4	2.4	2.0
Farmers, general.....	0.8	1.0	....	0.7	1.0
Poultry farmers.....	0.6	0.7	0.2	0.6	0.5
All other.....	1.1	1.3	0.2	1.1	0.5
Manufacturing and mechanical industries	30.4	32.7	21.4	29.4	29.2
Piano tuners.....	9.0	11.4	....	10.0	7.3
Chair caners.....	2.5	2.9	0.9	3.1	1.6
Weavers.....	1.7	1.6	2.0	2.4	0.3
Broom and brush makers.....	1.4	1.7	....	1.7	0.8
All other.....	15.8	15.1	18.5	12.2	19.2
Transportation and communication.....	2.8	2.5	3.5	1.7	5.1
Telephone operators.....	1.4	0.8	3.3	1.3	1.7
All other.....	1.4	1.7	0.2	0.4	3.4
Trade.....	30.3	35.9	8.4	33.1	26.3
Salesmen and canvassers.....	8.1	9.5	2.9	8.1	8.1
Standkeepers.....	5.5	6.9	0.2	6.2	4.8
Newsdealers.....	2.6	3.1	0.4	2.7	1.1
Insurance agents.....	4.1	4.9	0.9	5.4	2.8
All other.....	10.0	11.5	4.0	10.7	9.5
Public service.....	1.0	1.2	....	1.0	0.9
Professional service.....	22.3	18.5	37.3	24.9	19.1
Musicians (including music teachers).....	6.8	6.2	9.3	8.6	4.5
Ministers.....	0.7	1.0	....	1.0	0.5
Teachers.....	5.0	3.0	11.9	4.8	5.4
Lawyers and judges.....	1.1	1.4	....	1.4	0.6
Social workers.....	3.6	1.8	10.6	3.6	3.4
Osteopaths.....	1.9	2.1	1.2	2.2	1.7
Masseurs and chiropractors.....	1.8	1.9	1.6	1.7	1.7
All other.....	1.4	1.1	2.7	1.6	1.3
Domestic and personal service.....	5.5	3.7	12.8	2.4	11.9
General domestics.....	1.8	0.3	7.4	0.4	4.5
All other.....	3.7	3.4	5.4	2.0	7.4
Clerical occupations.....	5.2	2.5	16.2	5.1	5.5
Dictaphone operators.....	2.2	0.5	9.2	2.9	1.0
All other.....	3.0	2.0	7.0	2.2	4.5

the increasing entry of women generally into such work. The development and extension of home teaching are largely responsible for the increases in some of the special occupations of the blind women, including instruction in certain handicrafts, especially sewing, some of which may be turned to material account, even though proceeds from sales may be small.

¹ Data were collected from all parts of the country, about 80 per cent of reports coming from agencies for the blind and about 20 per cent from the blind themselves. Not included are persons employed in special shops or in home work. There are 2684 jobs represented, two or more jobs being held at one time by a certain portion of those employed, or some jobs being filled by different persons in succession. From publications of American Foundation for Blind.

Here it appears that in manufacturing and mechanical industries and in trade each there are practically three-tenths (30.4 per cent and 30.3 per cent, respectively) of the blind who are gainfully employed. In professional service there are a little over one-fifth (22.3 per cent). In these three occupations are gathered well over four-fifths (83.0 per cent). The remaining occupations in order follow: domestic and personal (5.5 per cent), clerical occupations (5.2 per cent), transportation and communication (2.8 per cent), agriculture (2.5 per cent), and public service (1.0 per cent).

Among those in specific occupations piano tuners come first, with almost one-tenth (9.0 per cent). They are followed by salesmen and canvassers, with a proportion only a little less (8.1 per cent). Next are musicians, including teachers of music (6.8 per cent), and after them standkeepers (5.5 per cent), and teachers (5.0 per cent). In these five occupations are a little over one-third (34.4 per cent) of the total number. Other specific occupations are in order: insurance agents (4.1 per cent), social workers (3.6 per cent), newsdealers (2.6 per cent), chair caners (2.5 per cent), dictaphone operators (2.2 per cent), osteopaths (1.9 per cent), masseurs and chiropractors (1.8 per cent), general domestics (1.8 per cent), weavers (1.7 per cent), broom and brush makers (1.4 per cent), telephone operators (1.4 per cent), lawyers and judges (1.1 per cent), general farmers (0.8 per cent), ministers (0.7 per cent), and poultry farmers (0.6 per cent). The ratings for such customary occupations for the blind as chair caning, broom and brush making, and weaving would be materially greater if there were embraced the blind employed in special shops. Several new occupations are listed which are proving increasingly desirable for the blind—standkeeping, social work (in large part work with some agency for the blind, including teaching in homes of the blind), dictaphone operating, osteopathy, and massage and chiropractic (apart from telephone operating and poultry farming).¹

As between different occupations males predominate in agriculture, manufacturing and mechanical industries (except weaving), trade, and public service; and females, in transportation and communica-

¹ Compared with census figures (1920), there are indicated decreases in the case of manufacturing and mechanical industries and agriculture; and increases in the case of professional service, trade, clerical occupations, transportation and communication, and public service (domestic and personal service showing little change). Increases are found for piano tuners, weavers (male), salesmen and canvassers, insurance agents, newsdealers, teachers, lawyers and judges, general domestics, and telephone operators; and decreases for musicians, ministers, and farmers (besides broom and brush makers and chair caners). It is to be remembered that in the present figures are not included blind persons in special industrial establishments or in home work (mainly engaged in broom making, chair caning, rug making, etc.). With the exclusion of these, the situation is modified with respect to manufacturing and mechanical industries.

tion, professional service (except osteopathy, massage and chiropractic, law, and the ministry), domestic and personal service, and clerical occupations. The heaviest predominance of females is in dictaphone operating, telephone operating, social work, and teaching. [Well over one-third (37.3 per cent) of females employed are in professional service.] No females are registered as general farmers, piano tuners, broom and brush makers, ministers, lawyers and judges, or in public service.

There are higher proportions for the totally blind than for the partially blind in all the several specific forms of manufacturing and mechanical industries (being most pronounced with weavers); in all forms of trade (especially with newsdealers and insurance agents); in all forms of professional service, except teaching (especially among musicians, ministers, lawyers and judges, and with little difference with masseurs and chiropractors and social workers). There are higher proportions for the partially blind in transportation and communication (though only a little greater in the case of telephone operators) and in domestic and personal service. Divergencies are not considerable in the case of agriculture, public service, and clerical occupations (though the proportion is greater for the totally blind with dictaphone operators). The reasons for the higher proportions for one group than for the other we may know only in part. In some measure there is indicated the material aid rendered in particular callings by even a little sight.

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO OCCUPATION BEFORE AND AFTER BLINDNESS

OCCUPATION	PER CENT DISTRIBUTION	
	<i>Before Blindness</i>	<i>After Blindness</i>
Total	100.0	100.0
Agriculture	6.8	0.8
Extraction of minerals	4.1	...
Manufacturing and mechanical industries	8.3	50.9
Transportation	1.7	...
Trade	0.8	11.7
Public service	0.8	0.8
Professional (and technical) service	2.5	26.7
Domestic and personal service	...	...
Clerical occupations	0.8	5.8
Labor (miscellaneous)	5.0	0.8
Unspecified	7.5	1.7
No occupation	61.7	0.8

With respect to the matter of occupations in which the blind are engaged, additional information is afforded from certain special investigations. In the preceding table is given the percentage distribu-

tion of blind persons having the attention of the Federal Board for Vocational Education, according to general occupations in which they are found both before and after the occurrence of their blindness (1928).¹

In the shift of persons from particular occupations before the loss of sight to others after its loss, or in the contrast of the proportions in the two cases, considerable light is thrown upon the nature of the vocational preferences of persons made blind, or upon the occupations which appear most suitable for the blind, and to which they the more readily move.

The most notable trend here is in the direction of trade, there being a proportion after blindness over fourteen times as great as before blindness. Next is professional and technical service, with a proportion over ten times as great; clerical occupations, with a proportion seven times as great; and manufacturing and mechanical industries with a proportion six times as great.² Conversely, after the advent of blindness no persons turn to transportation or mining as a means of livelihood; while the proportion turning to agriculture is only one-eleventh of that engaged in it prior to blindness, and the proportion turning to general labor only one-sixth.

Among specific occupations in which the blind are found after the occurrence of blindness broom making is first, with 13.0 per cent—followed by chair caning, with 12.1 per cent; weaving, with 10.4 per cent; and basket working with 7.8 per cent—or in all 43.3 per cent. In other words, not far from one-half of the blind taking up industrial employment are in the four occupations regarded as especially suitable for the blind. In occupations involving music are 15.6 per cent—teachers of music, with 7.8 per cent, musicians, with 4.3 per cent, and piano tuners, with 3.5 per cent. In the foregoing occupations are almost three-fifths of the blind (58.9 per cent). For salesmen the percentage is 5.2; for teachers (not of music), 4.3; and for chiropractors, 4.3.³

GAINFUL EMPLOYMENT OF BLIND ACCORDING TO AGE AT OCCURRENCE OF BLINDNESS

Upon the extent to which the blind may be engaged in gainful occupations, a not unimportant bearing is had by the age at which

¹ Statistics furnished through courtesy of Federal Board of Vocational Education.

² Among the semi-skilled none are reported before the occurrence of blindness; but 36.7 per cent after it. Among the skilled the respective proportions are 8.3 per cent and 14.6 per cent.

³ In California the blind have been distributed in the following occupations, with the percentage for each: domestics, 8.9; farmers, etc., 1.2; unskilled laborers, 1.3; skilled laborers, 0.4; professional, 1.8; students, 7.2; merchants, 0.9; newsdealers, 1.6; salesmen, 2.6; peddlers, 0.6; musicians and entertainers, 1.3; clerical, 0.4; dictaphone operators, 0.2; mendicants, 1.7; piano tuners, 0.8; chair caners, 1.4; basket workers, 1.0; broom

occurs the loss of sight. In the following table is given the percentage of blind males and females gainfully employed, according to the age at the occurrence of blindness (1910 and 1920).

PERCENTAGE OF BLIND GAINFULLY EMPLOYED ACCORDING TO AGE AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT OF TOTAL			
	1910		1920	
	Male	Female	Male	Female
Total.....	24.5	5.8	25.4	7.8
Less than 20 years.....	39.7	13.0	35.7	13.3
Less than 5 years.....	34.8	13.8	29.5	13.7
5 to 9 years.....	42.5	14.0	41.0	14.5
10 to 14 years.....	46.3	10.4	40.7	11.1
15 to 19 years.....	45.5	10.9	51.7	13.5
Age not definitely reported.....	....	....	14.0	4.5
20 years or over.....	19.1	2.6	20.8	4.4
20 to 24 years.....	43.1	8.3	43.5	12.8
25 to 44 years.....	32.8	5.4	36.6	7.9
45 to 64 years.....	13.4	2.2	15.4	4.1
65 years or over.....	4.3	0.8	3.2	1.5
Age not reported.....	12.2	2.7	17.1	7.2

The proportion occupied is considerably larger for those who lost sight under twenty than for those who lost it after that time. For

makers, 5.0; rug weavers, 0.2; no occupation, incapable of occupation, or over 65 years, 46.0; unknown, 15.5. Report of California Department of Public Welfare, 1926, p. 149. Of graduates of the New York State School for the Blind (constituting a rather select group), occupations, with the percentage for each, are as follows: piano tuners (in factories, music stores, or private work), 18.3; in business, 16.1; teachers (three-fourths in schools for the blind), 12.4; in organizations for the blind, 5.6; law, 3.2; osteopaths, 5.0; masseurs, 1.6; dictograph operators, 1.6; miscellaneous or unknown, 36.2. Report, 1930, p. 41. See also Proceedings of American Association of Instructors of Blind, 1920, p. 23. Of the blind employed in Wisconsin, the percentage in factories is 10.6; in workshops, 27.1; in stores, 17.4; at home, 10.6; and self-employed, 57.8. Report of Wisconsin Board of Control, 1930, p. 329. See also *ibid.*, 1916, p. 390. Of the blind in Massachusetts entirely self-supporting 22.7 per cent are in special workshops; 12.8 per cent, in regular industrial establishments with the seeing; and 64.5 per cent, in business or professions of their own. For those partly self-supporting the respective percentages are 2.5, 2.5, and 95.0. Report of Massachusetts Commission for Blind, 1925, p. 14. In an investigation by the American Association of Instructors of the Blind in 1878, it was found that there were 16 superintendents of schools for the blind; 216 teachers or helpers in schools for the blind; 34 ministers of the Gospel; 84 authors, publishers, or lecturers; 310 music teachers or vocalists; 69 organists; 125 piano tuners; 937 workers or employees in handicrafts; 277 storekeepers, etc.; 45 owners or managers of real estate; 760 persons engaged in housework, or at home, with sewing machines, plain sewing, etc. (most being women); and 78 in homes of employment. See Proceedings, 1878, p. 20; 1872, p. 41; Report of Ohio School, 1878, p. 14; New York Institute, 1879, p. 22; *Chautauquan*, xv., 1892, p. 65; E. E. Allen, "Education of Defectives," in "Education in United States," 1900; Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 28; Report of Massachusetts Board of Education, Division of Blind, 1922, p. 17; Report of Connecticut Board of Education of Blind, 1926, p. 108; 1930, p. 118; Publications of Pennsylvania Institution, no. 3, 1924, p. 22 ("What Can the Blind Do?"); census report, "The Blind and the Deaf: 1900," 1906, pp. 17, 18, 51-61.

males the respective percentages are 35.7 and 20.8, and for females 13.3 and 4.4. The lower proportions for the group whose blindness came later in life may to a large extent be ascribed to the circumstance that in this group are included many persons who are already well along in life, with some who have in any event become too old for industrial activities, and with others whose blindness has so recently befallen them that they have not been able to make necessary economic readjustments. This group is in general the less adaptive to new conditions, and the less likely to undertake new forms of employment, requiring as they may skill and a technique of a quite different order from that of the old. Among females losing sight in adult life, furthermore, are a number who are married, who would be less likely to be gainfully occupied. Persons, on the other hand, who lose sight in childhood and youth are in a much better position to accommodate their lives, which are so largely in the future, to the new situation. In addition, such persons have the advantage of vocational training which the special schools for the blind seek to promote to the fullest extent, and which in subsequent years often stands them in good stead. Further vocational assistance is extended by the special workshops existing in some centers, which mainly affect persons who have passed beyond the days of schooling. At

PERCENTAGE DISTRIBUTION OF BLIND BY OCCUPATIONS ACCORDING TO AGE AT LOSS OF SIGHT

SEX AND OCCUPATION	TOTAL	PER CENT DISTRIBUTION						
		AT LESS THAN 20 YEARS			AT 20 YEARS OR OVER			
		<i>Total</i>	<i>Less than 5</i>	<i>5 to 19</i>	<i>Total</i>	<i>20 to 44</i>	<i>45 to 64</i>	<i>65 or Over</i>
		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Males.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Broom makers.....	14.0	14.3	13.2	15.0	13.8	15.7	10.2	3.7
Farmers.....	11.2	5.8	3.3	7.8	15.5	11.4	21.5	47.8
Retail dealers.....	9.1	6.7	5.8	7.5	11.1	12.4	8.5	5.1
Piano tuners.....	7.6	15.1	17.1	13.4	1.3	1.8	0.1	0.7
Musicians and teachers of music.....	6.0	12.0	16.8	8.4	2.1	2.4	1.6	0.7
Chair caners.....	6.4	7.3	6.1	8.2	5.8	5.6	6.7	4.5
Hucksters and peddlers.....	5.3	2.9	3.2	2.6	7.3	7.4	7.6	3.0
Laborers, building and general	3.4	2.6	2.5	2.6	4.0	4.4	3.0	3.7
Agents and canvassers.....	2.8	2.3	2.5	2.1	3.3	3.6	2.8	1.5
Agricultural laborers.....	2.3	2.4	2.2	2.5	2.2	2.1	2.6	1.5
Newspaper carriers and news dealers.....	2.1	2.1	2.3	2.1	2.2	2.3	2.2	0.7
Clerks and salesmen.....	1.9	2.1	2.4	1.9	1.7	2.0	1.0	1.5
Basket workers.....	1.7	0.8	0.8	0.8	2.5	2.4	3.0	2.2

ECONOMIC CONDITION

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PERCENTAGE DISTRIBUTION OF BLIND BY OCCUPATIONS ACCORDING TO AGE AT
LOSS OF SIGHT—*Continued*

SEX AND OCCUPATION	TOTAL	PER CENT DISTRIBUTION						
		AT LESS THAN 20 YEARS			AT 20 YEARS OR OVER			
		Total	Less than 5	5 to 19	Total	20 to 44	45 to 64	65 or Over
Males— <i>Continued</i> . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clergymen	1.5	1.6	1.5	1.6	1.4	1.2	1.6	3.0
Real estate and insurance agents	1.2	0.9	0.6	1.1	1.5	1.4	1.8	2.2
School teachers	1.2	2.1	1.4	2.7	0.5	0.4	0.6	....
Carpet and rug makers	1.0	0.6	0.6	0.6	1.3	1.5	0.9	0.7
Weavers	0.9	0.8	0.8	0.8	0.9	1.0	0.9	....
Wood sawers and woodchoppers	0.9	0.8	0.5	1.0	0.9	1.1	0.6	....
Manufacturers and managers	0.8	0.5	0.3	0.6	1.0	0.9	1.2	1.5
Waiters and servants	0.7	0.6	0.7	0.5	0.7	0.8	0.6	0.7
Telephone operatives	0.6	0.7	0.7	0.7	0.6	0.7	0.4	....
Lawyers and judges	0.6	0.6	0.6	0.6	0.6	0.4	1.1	1.5
Laundry workers	0.5	0.2	0.2	0.3	0.8	0.8	1.0	0.7
Authors, editors, and librarians	0.5	0.5	0.6	0.5	0.5	0.5	0.7	....
All other and unclassifiable	15.2	13.6	13.0	14.1	16.3	15.9	17.8	12.7
Females	100.0	100.0	100.0	100.0	100.0	100.0	100.0	....
Seamstresses and fancy workers	20.4	15.7	15.1	16.0	30.1	25.4	34.5	....
Musicians and teachers of music	9.4	13.5	16.2	9.4	2.1	3.9	....	....
Chair caners	7.5	9.1	9.6	8.5	4.4	7.0	2.0	....
School teachers	6.5	8.7	7.8	10.4	1.6	2.2	1.4	....
Waitresses and servants	4.8	4.2	4.1	4.6	5.1	6.1	4.1	....
Basket workers	4.6	4.9	5.3	4.2	4.2	2.6	8.1	....
Farmers	4.3	1.2	1.0	1.6	10.0	4.4	12.8	....
Laundry workers	3.5	2.2	1.4	3.6	6.0	7.9	4.1	....
Weavers	3.4	4.7	3.9	6.2	0.9	1.3	0.7	....
Stenographers	3.3	5.2	7.4	2.0	....	....	....	....
Carpet and rug makers	2.8	2.5	2.9	2.0	3.0	3.1	4.1	....
Agents and canvassers	1.8	1.9	1.6	2.3	1.6	2.2	1.4	....
Boarding and lodging house keepers	1.6	0.9	0.2	2.0	3.0	2.2	3.4	....
Agricultural laborers	1.4	1.4	1.2	1.6	1.6	2.2	1.4	....
Retail dealers	1.1	1.2	1.0	1.6	0.7	0.9	0.7	....
Authors, editors, and librarians	1.0	1.1	0.6	2.0	0.7	0.9	0.7	....
Semi-skilled operatives in printing	0.9	1.2	1.4	1.0	0.2	0.4	....	....
Broom makers	0.9	0.6	0.2	1.3	1.6	2.2	1.4	....
Hucksters and peddlers	0.7	0.6	0.6	0.7	0.7	0.4	1.4	....
Practical nurses and midwives	0.5	0.4	0.4	0.3	0.5	0.9	....	....
All other and unclassifiable	19.6	18.6	18.0	18.9	22.0	23.7	18.2	....

the same time, however, it remains true that a person becoming blind after some experience in the sighted world of industry will have cer-

tain advantages over one who has always been blind, such as an acquired sense of self-reliance, industrial habits, and knowledge of general business methods and practices. It is possibly due to this last factor that the proportions for males gainfully employed are highest for persons losing sight at the threshold of adult life, or from fifteen to twenty-four years; though no less consideration should be given to the additional fact that persons at these periods of life generally have the fullest initiative and energy, either for continuance at an occupation previously engaged in or for adaptation to a new one.¹

In the preceding table is given for each sex the percentage distribution of the blind gainfully employed for the different occupations according to the age when sight was lost (1920).

Nearly all the occupations which have been considered as particularly suited for the blind, and which are generally included in the industrial training provided at the special schools, show larger proportions for those who lost sight under twenty, the exceptions being basket working, carpet and rug making, and weaving; they are also afforded to a large extent in the special workshops or in home teaching for adults. In the case of the occupations concerned with music—piano tuning and the playing and teaching of music—the proportion is several times greater than for those losing vision later in life, a circumstance which indicates the practical value of the musical instruction afforded in the schools for the blind. More general occupations which show a larger proportion for persons losing sight in childhood and youth are those of agricultural laborers, clergymen, school teachers, clerks and salesmen, and telephone operatives. The occupations represented by the two last named groups, as previously brought out, are now receiving increased attention from schools for the blind. Most of the general occupations, however, have greater proportions for those persons losing sight in adult life, or after twenty. In many instances there simply is a continuance in greater or less measure of the previous occupation despite the handicap in varying degrees of blindness. Notable illustration of this practice is found in the case of farmers and of persons engaged in some form of selling business, not a few persons in these classes endeavoring to remain at their former callings at whatever age the loss of vision falls. This is also

¹ Since 1910 there has been a certain decrease in the proportion of males gainfully employed who lost sight under fifteen, and an increase for those who lost sight thereafter, except in old age. With females there has been an increase for practically all groups, the more pronounced for those losing their sight in the later years of life. This increase among persons who became blind in adult life, especially as regards females, is doubtless one of the results of the extension of home teaching, which is carried on particularly among the older blind, and which has provided a modicum of gainful employment even for them.

true to a considerable extent of persons engaged in professional service and other persons whose occupations do not demand great physical activity or exertion. The extent to which attempts to remain at a particular life occupation depends in the greatest part upon the extent to which blindness serves as a hindrance or barrier.

With the female blind the same situation on the whole obtains. Much larger proportions in particular for persons losing sight under twenty are found in work that calls for a musical training; and also in chair caning, school teaching, weaving, stenography, and semi-skilled labor in printing—stenography in particular being an occupation which is increasingly offered in the vocational training of the blind. There are also larger proportions for basket workers, agents and canvassers, and literary workers. The larger proportion losing sight when past twenty which is found among plain and fancy sewers must be ascribed to the results of home teaching, particularly adapted to adults. The larger proportions for broom making and carpet and rug weaving among persons losing sight in adult life are doubtless attributable to the fact that these are all forms of employment commonly taught in the workshops for such persons. Other occupations in which the proportions are larger, such as farming, boarding-house keeping, etc., are those in which there is the ability to continue in some manner even after the loss of sight.

In the following table is given the percentage distribution of the blind who are gainfully employed, according to age at occurrence of blindness, as found by the American Foundation for the Blind from 1926 to 1930.¹

Here it appears that the earlier the loss of sight, especially when it occurs in infancy or childhood, the more likely to be entered is a clerical occupation (dictaphone operating being a notable example) or professional service (including music, teaching, and social work). When blindness comes in early life or in early adult life, we may relatively often expect an occupation in transportation and communication (and also broom making). If the loss of sight falls in late youth, or perhaps in early youth, a manufacturing or mechanical industry (notably piano tuning) may frequently be turned to. (Such may also be the case as regards chair caning.) Should it happen in earliest life or in advanced years, domestic and personal service may be the occupation entered. On its occurrence in middle adult life or in earliest life newsdealing is the more apt to be taken up. On its occurrence in adult life in general, there is considerable chance of agriculture being followed (especially poultry farming with respect

¹ See *ante*, p. 230.

BLINDNESS AND THE BLIND

PERCENTAGE DISTRIBUTION OF BLIND GAINFULLY EMPLOYED ACCORDING TO AGE AT LOSS OF VISION

OCCUPATION	PER CENT DISTRIBUTION					
	Age (Years)					
	<i>Under 5</i>	<i>5 to 9</i>	<i>10 to 19</i>	<i>30 to 34</i>	<i>35 to 49</i>	<i>50 and Over</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture.....	1.7	2.6	2.2	5.7	2.6	5.0
Farmers, general.....	0.4	0.5	0.8	1.4	1.5	1.0
Poultry farmers.....	0.6	....	0.8	1.7	0.4	....
All other.....	0.7	2.1	0.6	2.6	0.7	4.0
Manufacturing and mechanical industries.....	33.0	39.2	26.8	26.4	26.3	22.2
Piano tuners.....	12.2	17.0	9.3	4.3	0.4	1.0
Chair caners.....	2.2	4.7	4.1	2.2	3.4	2.0
Weavers.....	0.9	1.0	1.1	2.6	3.4	1.0
Broom and brush makers.....	1.4	3.1	1.4	1.7	0.7	....
All other.....	16.3	13.4	10.9	15.6	18.4	18.2
Transportation and communication.....	3.7	1.0	2.2	2.8	2.3	1.0
Telephone operators.....	2.1	....	0.8	1.1	0.7	....
All other.....	1.6	1.0	1.4	1.7	1.6	1.0
Trade.....	20.8	20.1	26.5	43.5	52.4	47.3
Salesmen and canvassers.....	6.3	4.2	6.6	11.1	16.9	14.1
Standkeepers.....	4.2	1.5	3.5	8.8	7.6	9.0
Newsdealers.....	2.2	1.0	1.4	1.4	5.4	2.0
Insurance agents.....	1.8	3.6	4.9	6.3	7.2	7.0
All other.....	6.3	9.8	10.1	15.9	15.3	15.1
Public service.....	0.1	0.5	....	1.7	2.3	4.0
Professional service.....	28.0	24.7	31.1	12.8	7.2	10.1
Musicians (including music teachers).....	11.8	8.7	5.3	1.1	0.4	1.0
Ministers.....	1.0	....	1.1	1.1	0.4	1.0
Teachers.....	6.1	6.7	7.0	1.1	0.7	1.0
Lawyers and judges.....	1.2	....	1.4	2.0	0.4	....
Social workers.....	4.1	3.6	5.3	1.7	1.1	1.0
Osteopaths.....	1.4	3.1	4.1	3.4	0.4	1.0
Masseurs and chiropractors.....	0.7	1.5	5.2	0.9	3.1	3.0
All other.....	1.7	1.0	1.7	1.4	0.7	2.1
Domestic and personal service.....	6.3	5.7	5.2	5.4	5.4	9.0
General domestics.....	2.7	2.1	1.7	1.1	0.4	....
All other.....	3.6	3.6	3.5	4.3	5.0	9.0
Clerical occupations.....	6.4	6.2	6.0	1.7	1.5	1.0
Dictaphone operators.....	4.0	2.6	2.6	....	....	....
All other.....	2.4	3.6	3.4	1.7	1.5	1.0

to early adult life); or some form of trade (as that of salesmen and canvassers, standkeepers, or insurance agents); or some professional pursuit (as that of lawyers and judges or of ministers). Where blindness happens in the later years of life, some such occupation as weaving or osteopathy or massage and chiropractic may relatively often become the one selected. Quite apparent in much of this distribution of

occupational status are the effects of the vocational training provided in the schools for those losing sight in the earlier years.

GAINFUL EMPLOYMENT ACCORDING TO SCHOOL ATTENDANCE

In connection with the bearings upon gainful occupation of the age of occurrence of blindness are to be mentioned the bearings of education. In the following table is given the percentage of the blind, and of each sex separately, gainfully occupied, according to the character of the schooling which they have had (1910 and 1920).

PERCENTAGE OF BLIND GAINFULLY EMPLOYED ACCORDING TO SCHOOL ATTENDANCE

CHARACTER OF EDUCATION	PER CENT OF TOTAL					
	1910			1920		
	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>
Total	16.8	24.5	5.8	18.1	25.4	7.8
Having attended school.....	28.5	39.3	12.1	27.1	36.2	12.8
Having attended special school...	39.2	52.5	19.2	34.4	45.7	17.6
Having attended other schools also.....	47.9	60.6	21.6	40.9	51.8	20.9
Common schools only.....	46.7	59.7	18.8	36.0	47.6	15.0
High school or academy.....	47.4	61.0	24.4	46.9	58.7	28.7
University or college.....	71.5	79.6	40.7	59.5	68.6	38.4
Schools of miscellaneous character.....	31.7	42.3	21.2	37.6	47.8	23.1
Schools of character not reported.....	47.1	56.8	24.6	50.9	58.1	34.2
Having attended no other school	35.7	48.7	18.4	31.4	42.5	16.3
Reporting no other instruction	35.9	49.0	18.4	31.2	42.3	15.8
Reporting instruction at home	26.8	36.2	18.5	34.0	45.9	21.5
Not having attended special school	16.5	24.6	4.0	15.9	22.3	4.7
Having attended—						
Common school only.....	14.1	22.0	3.1	13.9	20.8	4.2
High school or academy.....	19.2	27.0	8.7	18.0	30.0	5.7
University or college.....	30.7	38.4	5.3	31.8	41.1	8.0
Schools of miscellaneous character.....	14.0	22.2	3.5	15.5	24.4	5.4
Schools of character not reported.....	21.2	28.5	5.1	18.3	21.8	5.5
Not having attended school.....	9.9	15.2	2.3	9.2	13.8	3.2
Reporting instruction at home.....	17.7	27.5	6.2	19.0	28.3	10.1
Reporting no instruction.....	9.6	14.8	2.1	8.5	13.0	2.7
Not reporting as to education.....	7.8	13.3	1.7	6.1	5.2	7.3

For the blind in general a distinctly better economic showing is made for those who have attended school than for those who have not. The proportion gainfully occupied among the former is three times as great as among the latter, or 27.1 per cent as against 9.2 per cent. Among males the respective percentages are 36.2 and 13.8, and among females 12.8 and 3.2. For those who have attended school

the proportion is double for those who have attended a special school for the blind, whether alone or in connection with other schools, than for those who have not, or 34.4 per cent as against 15.9 per cent. In reality, the proportion would be higher for those who have attended an institution for the blind, especially persons who have attended only such, but for the fact that among them are some who became blind in early life and have as yet not reached the age of economic activity. The figures on the whole speak well for the value of the industrial training and preparation afforded by the special institutions for the blind. The schools have a difficult task in this regard and labor under many handicaps. The degree of success that they have had, limited though this success must be by the exigencies of the case, reflects favorably upon their realization of their duties and upon their practical efforts to meet these duties. The economic benefits derived, however, are greater when there has been attendance at another school in addition to the special school for the blind. To some extent this is accounted for by the inclusion of a limited number who became blind in adult life, and after previous attendance at a general school have gone to special workshops for the blind. Successful entry into industry is doubtless also influenced in certain cases by education at a technical or professional institution after attendance at a special institution. Though the greater proportion in this group have attended only common schools in addition to the schools for the blind, yet the proportion is considerably affected by the inclusion of some who have had the ability to go further and who have attended high school or college.

Among those not having attended an institution for the blind are doubtless many who have had ordinary schooling, but upon whom blindness has come in later years, past the usual time of industrial preparation and of economic activity. (Some are included in this group also whose attendance has been at schools for the feebleminded.) With females support from other members of their families is at times to be expected.

The figures indicate that the economic benefits derived from home instruction have been almost doubled when this was had in addition to the training in a special school for the blind, the proportions gainfully occupied being, respectively, 19 per cent and 34 per cent. Of those reporting no instruction at all, 8.5 per cent are gainfully occupied.

The results of education, particularly at a special institution for the blind, are even more marked in the case of females.¹

¹ Compared with 1910, there has been a slight decline in the proportion of the blind gainfully occupied who have attended school, whether at special institutions or at regular

EXTENT TO WHICH BLIND ARE SELF-SUPPORTING

Our inquiries hitherto have related to the extent to which the blind are actively and remuneratively engaged in the industrial life of the community. Another question now presents itself for our consideration: How far are the blind who are reported as gainfully occupied actually self-supporting? Or to what extent are the earnings received by the blind sufficient to afford them a life free from dependence? In what measure, in other words, are the blind able of themselves to provide their means of livelihood? And to what sources do those not so able have to look for their sustenance?

In the first place, it is to be stated that of the blind in general ten years of age or over less than one in twelve (7.7 per cent) are reported as self-supporting.¹ The proportion for males is a little under one-eighth (11.4 per cent), and for females 2.3 per cent. (We have no means of knowing what proportion of the general population is to be regarded as "self-supporting.") In the following table is given the percentage of blind males and females who are reported as self-supporting in the principal occupations in which they are engaged (1920).

Here the actual economic condition of the blind is more fully revealed. The proportion really earning their self-support is found to be seriously limited among those reported as engaged in some form of remunerative employment.² Of the male blind gainfully employed less than one-half (46.2 per cent) are self-supporting. Less than one-third (30.5 per cent) of the female blind are so.³ For both sexes together the proportion is 43.4 per cent.

In most of the occupations specified is brought out the low earning capacity of the blind. It is also indicated that the sightless are often better off in general callings than in some of the occupations which

schools. There has been a gain, on the other hand, in the proportion who have had instruction in the home, a situation to be ascribed to the beneficial extension of home teaching. There is also a gain with respect to attendance at schools of miscellaneous character, which include the technical schools.

¹ In 1910 the respective percentages were 6.6, 10.4, and 1.3, all representing a certain increase.

² The actual economic condition of the blind is possibly further revealed in figures showing their dependence upon earnings, though these figures, because of a misunderstanding of the nature of the question in a number of instances, are to be relied upon in but limited measure (80.6 per cent for males, and 62.7 per cent for females). The differences between these figures and figures for self-support may indicate to what extent the blind have to seek aid from other sources.

³ In 1910 the proportion for males was 43.8 per cent, and for females 22.7 per cent. The improved situation may quite possibly be attributed in large measure to increased efforts on the part of the various agencies for the blind to make suitable provision for training and employment, with the necessary assistance to keep blind persons at jobs, and with greater attention to possible openings. At the same time there is to be kept in mind the increasing difficulties with time of the securing of employment by the blind.

BLINDNESS AND THE BLIND

PERCENTAGE OF BLIND SELF-SUPPORTING ACCORDING TO OCCUPATION

<i>Occupation</i>	<i>Per Cent of Total</i>
MALE	
Total.....	46.2
Agriculture.....	54.2
Farmers.....	59.1
Agricultural laborers.....	41.4
Manufacturing and mechanical industries.....	37.9
Laborers, building and general.....	19.1
Broom makers.....	34.1
Piano tuners.....	61.7
Chair caners.....	15.5
Basket workers.....	24.5
All other.....	51.7
Trade.....	51.9
Retail dealers.....	64.0
Hucksters and peddlers.....	31.5
Newspaper carriers and news dealers.....	35.0
Clerks in stores and salesmen.....	51.8
Professional service.....	58.6
Musicians and teachers of music.....	52.2
All other.....	71.4
Domestic and personal service.....	38.0
Clerical occupations.....	36.9
Agents and canvassers.....	27.3
FEMALE	
Total.....	30.5
Manufacturing and mechanical industries.....	13.9
Seamstresses and fancy workers.....	6.0
All other.....	19.5
Professional service.....	48.1
Musicians and teachers of music.....	34.8
Domestic and personal service.....	33.1

have been considered especially suited for them, a circumstance which doubtless may be accounted for largely by the fact that a number of unusually skilled or gifted persons have remained in the same occupations in which they were engaged before the oncoming of blindness. With males, among general occupations, the most favorable percentages on the whole are found in agriculture, trade, and professional service, the best showing being in certain commercial or professional positions. Their own means of support is provided by almost two-thirds (65.4 per cent) of persons in professional service (other than musicians and teachers of music), by a little under two-thirds (64.0 per cent) of retail dealers, by almost three-fifths (59.1 per cent) of farmers, and by a little over one-half (51.8 per cent) of clerks and salesmen. The proportion self-supporting among agricultural laborers is approximately two-fifths (41.4 per cent); among persons in domestic and personal service, approximately two-fifths (38.0 per

cent); among newspaper carriers and news dealers one-third (35.0 per cent); among hucksters and peddlers, three-tenths (31.5 per cent); among agents and canvassers, one-fourth (27.3 per cent); and among general laborers, one-fifth (19.1 per cent).¹

Among the occupations regarded as peculiarly suited for the blind, the most profitable ones are those concerned in some manner with music. The best results here are in the case of high-grade performers, and the poorest in the case of mere street musicians. Piano tuners show three-fifths (61.7 per cent) of their number self-supporting, only a little less than retail dealers. Musicians and teachers of music are not far behind, with a proportion of over one-half self-supporting (52.2 per cent). Among broom makers, basket workers, and chair caners the proportions self-supporting are, respectively, one-third (34.1 per cent), one-fourth (24.5 per cent), and one-sixth (15.5 per cent). (Carpet and rug makers, weavers, and hammock and net makers have, respectively, one-third, one-fourth, and a little over one-half of their numbers self-supporting.)

Females are still less able to provide for themselves. With them the highest proportion self-supporting is found in professional service. A little over one-third (34.8 per cent) are self-supporting as musicians, while for other professional pursuits, in large part teaching, the proportion is about three-fifths. One-third (33.1 per cent) in domestic and personal service and about one-fifth (19.5 per cent) in various types of semi-skilled operations are self-supporting. Only 6 per cent are self-supporting in sewing work, most of the blind females in this occupation being engaged in work in their homes and receiving but small and irregular compensation therefor. The proportion of females self-supporting in other occupations is generally somewhat smaller than of males, except in the case of telephone operatives and stenographers, the proportions for females in these occupations being, respectively, nearly nine-tenths and over three-fourths.

In special investigations in certain States further light is thrown upon the economic standing of the blind, particularly upon how far

¹ In general manufacturing and mechanical industries the approximate proportion self-supporting for manufacturers and others in managerial positions is five-sixths, for tobacco workers two-sevenths, and for semi-skilled operatives in printing two-thirds; in transportation, for telephone operatives one-half, and for drivers and teamsters two-fifths; in trade, for real estate and insurance agents two-thirds, for bankers and persons in kindred occupations three-fourths, and for commercial travelers three-fifths; in professional service, for clergymen two-fifths, for school teachers four-fifths, for lawyers and judges five-sixths, for literary workers three-fifths, for persons in medical service four-fifths, and for public entertainers two-thirds; in domestic and personal service, for wood sawyers and wood-choppers one-sixth, for waiters and servants three-eighths, for laundry workers, one-third, for boarding and lodging house keepers, four-fifths, and for janitors and sextons one-sixth; and in clerical occupations, for clerks three-fifths, and for stenographers seven-eighths.

they may be regarded as self-supporting.¹ These States are: New York (1904), Massachusetts (1906), Maryland (1908), New Jersey (1909), Ohio (1909), Pennsylvania (1909), New York (outside New York City and Buffalo) (1913), Indiana (1914), Nebraska (1916), Wisconsin (1922), Minnesota (1923), Massachusetts (1925), Connecticut (1926), and California (1926).² In the following table is given the percentage of the blind who are self-supporting in these States, and in some of them the percentage also wholly self-supporting and the percentage partly so.³

PERCENTAGE OF BLIND SELF-SUPPORTING IN DIFFERENT STATES

STATE	PER CENT OF TOTAL		
	<i>Wholly or Partly Self-Supporting</i>	<i>Wholly Self-Supporting</i>	<i>Partly Self-Supporting</i>
New York (adult).....	31.0	10.0	21.0
Massachusetts (adult).....	26.6	10.0	16.6
Maryland (adult).....	24.5	13.0	11.5
Ohio (adult).....	....	13.0	....
New Jersey (adult).....	31.3	17.2	14.1
Pennsylvania (adult).....	19.3	9.8	9.5
New York (adult).....	....	16.1	....
Indiana (adult).....	....	19.5	....
Nebraska (total).....	61.9	31.9	30.0
Wisconsin (total).....	33.6	13.9	19.7
Minnesota (total):			
Males.....	48.0	30.8	17.2
Females.....	36.3	25.9	10.4
Massachusetts (total).....	23.4	18.9	4.5
Connecticut (total).....	32.3	21.0	11.3
California (total).....	20.0	16.6	3.4
Rhode Island (total).....	22.7	13.1	9.6

The proportion of the blind who are wholly or partly self-supporting, as found in these several investigations, ranges from a little under one-fifth to a little over three-fifths, the mean perhaps being a little

¹ All the investigations are not for the same period of time, but this factor seems not to be of special weight in the matter.

² Figures are taken from the following: Report of New York Commission for Blind, 1904, p. 60; Report of Massachusetts Commission for Blind, 1906, p. 26; 1925, p. 14; Report of Maryland Commission for Blind, 1908, p. 6; Report of Ohio Commission for Blind, 1908, p. 15; *Ohio State Medical Journal*, v., 1909, p. 466; Ohio Bulletin of Charities and Correction, xv., 1909, 1, Feb., p. 28; xxvii., 1911, 4, Dec., p. 23; Proceedings of American Association of Workers for Blind, 1909, p. 36; Report of Pennsylvania Institution, 1909, p. 22; Report of Nebraska School, 1916, p. 28; *Outlook for Blind*, iii., 1910, p. 161; x., 1915, p. 34; June, 1930, p. 43; *Survey*, xxix., 1913, p. 641; Indiana Bulletin of Charities and Correction, Dec., 1914, p. 498; Report of Wisconsin Agency for Blind, 1923, p. 4; Report of Wisconsin Board of Control, 1922, p. 58; Report of Minnesota Commission for Blind, 1923, p. 105; Report of Connecticut Board of Education of Blind, 1926, p. 112; Report of California Department of Public Welfare, 1926, p. 148.

³ In some cases reference is to the total number of blind persons, and in others only to adults—but seemingly for the most part with little material difference between the two. In certain cases housewives are directly included. Of the blind in Cleveland 22.9 per cent are fully or partially self-supporting. *Outlook for Blind*, March, 1928, p. 45.

under three-tenths. The proportion for those wholly self-supporting ranges from about one-tenth to about three-tenths, with a mean perhaps of about one-sixth. (The proportion for the United States as a whole is, as we have seen, 7.7 per cent.) The proportion for those partly self-supporting is little different. The differences in the proportions for different States are not easily to be accounted for. Much depends on the care and thoroughness of different investigations, as well as upon conceptions of "self-support" and upon the extent of family aid.¹ The age factor is of some consequence; the older the blind population in general the smaller being the proportion self-supporting. Possibly the likelihood of self-support is greater in States predominantly agricultural.²

The connection between self-support and education is much the same as that between gainful employment and education.³ For both males and females the proportions self-supporting are somewhat higher for those who have attended school than for those who have not. With males the proportions shown when attendance has been confined to special institutions for the blind are the same as when confined to other types of schools; the proportion is highest, however, when there has been attendance at both. With females, while the proportion is likewise highest for those who have had both kinds of schooling, it is somewhat higher for those who have had education exclusively at an institution for the blind than for those who have had it entirely at other schools.

AMOUNT OF EARNINGS OF BLIND

Probably the clearest view of the extent to which the blind are self-supporting may be gained from an examination of the actual

¹ At times persons reported as "self-supporting" are stated to be more or less dependent on family.

² In Table XXIX in Appendix A is given for Minnesota as regards age the percentage of the blind who are wholly or partially self-supporting, the percentage who are wholly so, and the percentage who are partially so. (Report of Minnesota Commission for Blind, 1923, p. 105.) The best showing as to self-support is with respect to the prime of life. Among the male blind the age periods with the largest proportions are those from forty-one to fifty, from thirty-one to forty, from twenty-one to thirty, and from fifty-one to sixty. Among the female blind the situation is not greatly different, later periods of life perhaps having a relatively better showing. In Massachusetts (1906), the proportion of the blind from twenty to sixty who are entirely self-supporting is almost one-half greater than for all the blind taken together, and the proportion partly self-supporting nearly double. In California none of the blind over sixty are self-supporting.

³ For males the percentage having attended school (1920) is 48.6, a special school for the blind 49.0, such schools and other schools also 51.3, only such schools 47.5, other schools only 47.5, and not having attended school 39.2. The respective percentages for females are 33.2, 34.0, 40.8, 30.6, 27.9, and 21.6. (Figures from census reports.) Of ex-pupils of the Pennsylvania Institution 43.7 per cent are found to be fully self-supporting (females being so regarded when housekeepers); 1.8 per cent, partly self-supporting; 18.7 per cent, helping in the support of others; and 23.7 per cent, having savings. Publications of Pennsylvania Institution, no. 3, June, 1926, p. 19 ("What Can the Blind Do?").

earnings received by them. In the following table is given, for males and for females, the percentage distribution of the blind gainfully occupied according to the amount of their annual earnings (1910 and 1920).

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO EARNINGS

ANNUAL EARNINGS	PER CENT DISTRIBUTION			
	1910		1920	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Total.....	100.0	100.0	100.0	100.0
Annual earnings of—				
Less than \$100.....	31.9	59.1	12.8	38.4
\$100 to \$199.....	22.0	18.8	14.1	14.9
\$200 to \$299.....	11.3	6.8	11.6	8.9
\$300 to \$399.....	9.5	5.7	11.5	12.4
\$400 to \$499.....	4.4	2.9	7.2	6.0
\$500 to \$599.....	5.2	2.9	8.7	5.0
\$600 to \$799.....	5.1	1.3	9.8	5.6
\$800 to \$999.....	2.5	0.5	6.9	4.0
\$1000 to \$1199.....	2.5	0.8	5.2	2.5
\$1200 to \$1499.....	1.4	0.8	3.7	1.1
\$1500 or over.....	4.2	0.5	8.5	1.0

Of a large portion of the blind earnings are seen to fall far short of what a person should have for even a low standard of living. In not a few instances they are so meagre that they can be regarded as little more than nominal. In certain cases blind persons, especially blind females, are engaged in some kind of home work, frequently needlework, the products of which are marketed by some special agency for the blind, the proceeds rarely of any considerable amount, less the cost of material, being given to workers. Of males, one-eighth (12.8 per cent) have earnings of less than \$100 a year. A little more than one-fourth (26.9 per cent) have under \$200. Just one-half (50.0 per cent) receive less than \$400 a year. Three-fourths (75.7 per cent) have less than \$800. Only a little over one-sixth (17.4 per cent) have earnings of \$1000 or over, and one-twelfth (8.5 per cent) of \$1500 or over. For females, earnings are far less. Over one-third (38.4 per cent) do not have as much as \$100 a year and three-fourths (74.6 per cent) not as much as \$400. Only one-fifth (19.2 per cent) receive \$500 or more a year.¹

¹ As compared with 1910, the results appear to be more satisfactory. The proportions for males and females alike show a decline for those receiving the lower earnings and increases for those receiving the higher earnings. The proportion of males receiving under \$200 has decreased by one-half. The proportion receiving \$500 or over has more than doubled. For blind females a decrease is shown for earnings of less than \$200, but an increase above that sum, the increases becoming more and more pronounced with ad-

In the following table is given the percentage of the blind having annual earnings of different amounts according to occupations (1920).

PERCENTAGE OF BLIND GAINFULLY EMPLOYED ACCORDING TO AMOUNT OF ANNUAL EARNINGS IN DIFFERENT OCCUPATIONS

OCCUPATION	PER CENT OF TOTAL				
	<i>Less than \$100</i>	<i>\$100 to \$399</i>	<i>\$400 to \$799</i>	<i>\$800 to \$1499</i>	<i>\$1500 and Over</i>
MALE					
Total.....	12.8	37.2	25.7	15.8	8.5
Agriculture.....	15.3	42.6	19.4	15.5	7.3
Farmers.....	13.1	37.7	22.0	18.0	9.2
Agricultural laborers.....	26.1	55.0	10.0	7.1	1.4
Manufacturing and mechanical industries....	13.3	40.1	28.7	12.8	5.0
Laborers, building and general.....	38.5	44.6	13.5	3.4	...
Broom makers.....	10.9	43.6	37.7	6.3	1.5
Piano tuners.....	6.6	21.3	21.6	34.4	16.3
Chair caners.....	19.6	57.3	21.7	1.4	...
Basket workers.....	20.8	41.6	35.1	2.6	...
Trade.....	10.4	35.2	26.5	16.4	11.5
Retail dealers.....	7.3	25.8	30.6	22.8	13.5
Hucksters and peddlers.....	16.9	56.0	22.7	3.6	0.9
Newspaper carriers and news dealers.....	13.8	51.1	22.3	12.8	...
Clerks and salesmen.....	5.1	17.7	38.0	22.8	16.5
Professional service.....	9.7	24.7	20.2	27.2	18.2
Musicians and teachers of music.....	13.1	29.5	20.7	25.1	11.6
All others.....	6.2	19.7	19.7	29.3	25.1
Domestic and personal service.....	22.7	40.3	20.1	13.6	3.2
Clerical occupations.....	11.7	48.1	22.7	13.0	4.5
Agents and canvassers.....	14.0	55.4	20.7	8.3	1.7
FEMALE					
Total.....	38.4	36.2	16.6	7.7	1.0
Manufacturing and mechanical industries....	51.8	35.9	11.7	0.4	0.2
Seamstresses and fancy workers.....	76.9	20.5	2.1	0.5	...
Semi-skilled operatives.....	33.6	47.0	18.7	0.4	0.4
Professional service.....	12.9	35.6	29.4	20.2	1.8
Musicians and teachers of music.....	21.7	49.3	18.8	10.1	...
All other.....	6.4	25.5	37.2	27.7	3.2
Domestic and personal service.....	43.6	42.6	9.9	4.0	...

Generally speaking, the greater the proportions self-supporting in given occupations the larger are the proportions having an appreciable wage. Among males, earnings of \$800 or more are most often received in professional service, not far from one-half (45.4 per cent) of those thus engaged having this sum. Among musicians and teachers of music the proportion is over one-third (36.7 per cent), and among vancing earnings. (Median earnings were \$182 for males, and \$86 for females.) This increase in the earnings of the blind is largely a reflection of the general advance in salaries and wages in this period, but some part, we may believe, is due to the enlarging efforts, already referred to, to serve the blind by better industrial provision.

those in other professional pursuits over one-half (54.4 per cent). In manufacturing and mechanical industries general wages are not high, but one-half of piano tuners (50.7 per cent) receive \$800 or over. This sum is received by somewhat more than one-third (36.3 per cent) of retail dealers and by almost two-fifths of clerks and salesmen (39.3 per cent), though by only a little over one-fourth (27.9 per cent) of the entire group of persons in trade. It is received by slightly over one-fourth (27.2 per cent) of farmers. The real proportion for farmers is, however, considerably higher, as many of this group report only actual cash receipts, with no allowance for products consumed on the farm. This same qualification possibly applies to a certain extent to retail dealers, some of whom may at times have failed to take account of personal expenses met from business receipts.

The remaining occupations reveal earnings much lower. Among persons in the more general occupations, well over one-half have earnings of under \$400 a year. Among these are agricultural and general laborers, with over four-fifths receiving such sum; hucksters and peddlers, with almost three-fourths; agents and canvassers, newspaper carriers and newsdealers, and persons in domestic and personal service, with about two-thirds.

In the particular occupations for the blind there are for the most part but limited earnings, exceptions being found only for those occupations concerned with music. Chair caning is the poorest paid of the employments of the blind, over three-fourths so engaged receiving under \$400 a year. Basket workers fare somewhat better, and broom makers slightly better still, though almost two-thirds of the former class and over one-half of the latter have earnings under \$400. The proportion in any of these occupations receiving as much as \$800 annually is extremely small. These amounts may be regarded as fairly typical of the earnings received in the so-called special occupations of the blind.

Not a few of the occupations reported by the blind, as has already been indicated, are more or less irregular pursuits or odd jobs, the earnings picked up therefrom often amounting to very small sums; at times these sums are accepted as little more than charitable offerings.

With females earnings in the several occupations are usually very low, corresponding as a rule to the proportions found self-supporting in these occupations. In general professional service a little under one-fourth (22.0 per cent) receive \$800 or more a year, the proportion among musicians and teachers of music being only about one-tenth, though in other professional pursuits the proportion is much higher. On the other hand, of persons in domestic and personal service and

of semi-skilled operatives, very large proportions receive less than \$400 a year; of seamstresses reporting, over three-fourths have less than \$100. (About one-half of stenographers have earnings of \$800 or more.)¹

PERCENTAGE DISTRIBUTION OF BLIND BY EARNINGS ACCORDING TO SCHOOL ATTENDANCE

ANNUAL EARNINGS	PER CENT DISTRIBUTION						
	TOTAL	HAVING ATTENDED SCHOOL					NOT HAVING ATTEND- ED SCHOOL
		Total	Special School for Blind			Other Schools Only	
			Total	Other Schools Also	No Other School		
MALE							
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$100....	12.8	10.2	9.1	8.4	9.6	14.1	21.4
\$100 to \$199.....	14.1	13.0	12.1	10.9	12.8	16.5	17.7
\$200 to \$299.....	11.6	11.0	10.7	9.3	11.6	12.3	13.7
\$300 to \$399.....	11.5	11.6	11.7	10.7	12.4	11.3	11.1
\$400 to \$499.....	7.2	7.8	8.3	8.1	8.4	6.1	5.5
\$500 to \$599.....	8.7	9.1	9.8	8.0	11.0	6.8	7.5
\$600 to \$799.....	9.8	10.7	11.5	12.4	10.9	7.9	6.6
\$800 to \$999.....	6.9	7.3	7.8	9.1	6.9	5.9	5.2
\$1000 to \$1199....	5.2	5.7	5.8	5.9	5.7	5.2	3.8
\$1200 to \$1499....	3.7	4.0	4.1	5.0	3.5	3.8	2.5
\$1500 and over....	8.5	9.4	9.2	12.1	7.3	10.2	5.2
FEMALE							
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$100....	38.4	33.9	31.9	21.9	37.4	50.0	58.1
\$100 to \$199.....	14.9	14.7	14.4	18.3	12.2	17.6	16.3
\$200 to \$299.....	8.9	8.9	9.4	5.0	11.7	5.4	9.3
\$300 to \$399.....	12.4	13.8	13.7	16.4	12.2	14.9	5.2
\$400 to \$499.....	6.0	6.5	6.9	6.4	7.2	2.7	3.5
\$500 to \$599.....	5.0	5.2	5.2	6.4	4.5	5.4	3.5
\$600 to \$799.....	5.6	7.1	7.9	9.6	7.0	....	....
\$800 to \$999.....	4.0	4.6	4.8	5.5	4.5	2.7	1.7
\$1000 to \$1199....	2.5	2.9	3.1	4.1	2.5	1.4	1.2
\$1200 to \$1499....	1.1	1.4	1.6	3.7	0.5	....	....
\$1500 and over....	1.0	1.0	1.1	2.7	0.2	....	1.2

¹ Of blind males in general industrial establishments the average annual wage is said to be \$1020. L. T. Brown, "Stand Concessions," 1930. Of the male blind in Connecticut 12.0 per cent are reported to have annual earnings of under \$400 (or to be cared for); 20.9 per cent, from \$400 to \$700; 22.1 per cent, over \$800; and 45.0 per cent, to be independent. Of the female blind 63.1 per cent are reported to be cared for; 7.9 per cent, to have earnings of under \$100; 0.7 per cent, to have earnings of over \$100; and 20.2 per cent, to be independent. Report of Connecticut Board of Education of Blind, 1930, p. 118. Of blind persons in general industrial establishments in or near Philadelphia the annual average wage is \$1039; of merchants, \$700; and of musicians, \$624. Report of Pennsylvania Institution, 1924, pp. 25, 95; 1925, pp. 28, 82. Average annual receipts from newsstands in New York State are \$1240 ranging from \$1040 to \$2600. Report of New York State Commission for Blind, 1931, p. 14. See also Publications of Pennsylvania Institution

AMOUNT ACCORDING TO SCHOOL ATTENDANCE

In the preceding table is given the percentage distribution of the blind and of either sex separately, by amount of annual earnings according to previous attendance at school.

The proportions receiving the highest incomes are largest among those who have attended school, and the proportions receiving the lowest largest among those who have not. For the most part the highest earnings are for those who have attended schools for the blind and other schools also. In some cases this has been at an institution for higher education, or at a technical or professional school, which has given those of a higher type of intellect an equipment which fits them for larger financial rewards. In general, however, persons in the more remunerative professional and business positions are more likely to have had at least a part of their schooling in the regular schools, and possibly before the advent of blindness.

MEANS FROM WHICH SUPPORT OF BLIND IS DERIVED

In the following table is given the percentage distribution of the blind according to different means of support, as found in investigations in Massachusetts (1901, 1906, 1919, and 1925), New Jersey (1909) (3 investigations), Pennsylvania (1909), Wisconsin (1922), Minnesota (1924), California (1926) (2 investigations), and New York (1928).¹

A certain small proportion of the blind, in the first place, are to be regarded as independent, being in possession of resources of their own from which they are enabled to derive support. This proportion ranges in different States or communities from a few per cent to one-third, for the most part seldom as much as one-tenth—not a little depending on the definitions involved.² For the country as a whole (1910) the proportion of the blind population ten years of age or over reported as "living on own means" is 7.6 per cent with males, and 4.9 per cent with females.³

How are the remainder of the blind, comprising no less than two-

no. 3, June, 1924 ("What Can the Blind Do?"); Report of Minnesota Commission for Blind, 1923, pp. 102, 106; *Outlook for Blind*, March, 1927, p. 17. In manufacturing and mechanical occupations reported (1926-1930) average annual wages for blind males are \$1040, and for blind females \$728. Data from American Foundation for Blind.

¹ In addition to previous references, see Bulletin of Massachusetts Department of Labor, no. 21, Feb., 1901; Report of Massachusetts Commission for Blind, 1919, p. 14; *Outlook for Blind*, xiii., 1920, p. 112; Report of New Jersey Commission for Blind, 1909, p. 6; Report of Wisconsin Board of Control, 1922, p. 58; 1924, p. 45; Report of Minnesota Board of Control, 1924, p. 42; Report of New York Commission for Blind, 1928, p. 23. (In some cases children are included.)

² From 5 to 10 per cent are held to be "housekeepers," and not in need of outside aid.

³ According to the special reports made by the blind the respective percentages are 8.6 and 4.7. See report of Census Bureau—"The Blind Population of the United States: 1910," 1917; "The Blind in the United States: 1910," 1918.

PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO MEANS OF SUPPORT

MEANS OF SUPPORT	PER CENT DISTRIBUTION									
	Massachusetts				New Jersey		Pennsylvania		New York	
	(1)	(2)	(3)	(4)	(1)	(2)*	(1)*	(2)	(1)	(2)
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Self-supporting.....	...	...	...	...	...	20.7	28.3	...	16.1	20.0
Entirely self-supporting.....	43.8	10.0	29.3	18.9	17.2	...	...	9.7	...	16.6
Partly self-supporting.....	4.7	16.6	10.4	4.5	14.1	...	...	9.3	...	3.4
Independent income.....	...	16.3	...	13.4	9.3	...	6.5	9.0	14.2	3.2
Partly self-supporting or independent.....	...	...	...	...	...	...	...	...	...	18.9
Housekeeping.....	...	...	5.4	7.8	...	...	...	...	...	8.4
Dependent on family.....	...	30.0	20.8	...	33.2	...	...	...	27.7	22.8
Dependent on relatives.....	...	...	...	22.1	...	...	...	...	...	15.2
Dependent on family or relatives.....	33.3	...	...	...	...	...	...	...	...	...
Dependent on family, relatives, or friends.....	...	...	...	...	...	69.7	62.8	42.7	...	...
Dependent on private aid.....	1.3	...	7.5	1.1	...	...	...	2.2	7.6	...
Dependent on relatives, friends or charitable societies.....	...	...	...	...	...	...	...	...	...	...
Inmates of private institutions.....	...	...	...	...	12.4	...	...	3.4	...	...
Dependent on pensions of all kinds.....	...	...	...	7.6	5.3	5.7	4.9	...	...	2.4
Dependent on general public pensions.....	1.7	...	...	...	...	...	...	6.8	...	1.3
Dependent on pensions for the blind.....	...	...	3.0	...	...	...	...	...	...	...
Dependent on public aid.....	...	19.6	2.1	2.1	...	...	...	...	10.7	...
Inmates of public institutions.....	3.8	...	2.6	...	8.5	4.8	8.3	8.4	24.1	...
Inmates of institutions of all kinds.....	...	...	...	8.6	...	...	...	...	...	3.5
Dependent on compensation, corporation benefits, etc.....	...	...	...	...	...	...	...	...	...	...
Mendicants.....	...	...	...	...	...	...	...	0.7	...	2.1
Minors.....	...	...	18.3	13.9	...	11.6	...	3.3	...	...
Dependent on other aid.....	...	...	...	...	...	...	...	...	...	...
Inmates of private institutions or supported by charity.....	...	...	...	...	...	...	...	...	...	41.3
Miscellaneous.....	11.4	7.5	2.7	2.6	...	...	8.9	4.5	10.3	...
										5.3
										3.1

* Containing duplicates.

thirds of their entire number, supported? This is done in three ways: by the assistance of families or immediate friends, which is the most common method; by some form of private aid of less direct or personal character, for the most part through almsgiving or through institutional care; and by some form of public aid, through both institutional and non-institutional provision.

Support of the blind by their own families or near kin would appear to be the most natural procedure in the case of those unable to provide for themselves, and is in fact the usual one. (In some States support of infirm or incapacitated members of one's family is required by law.¹) The proportion of the blind thus assisted would be greater than it is but for the circumstance that many have families and relatives who are themselves poor or with little means, while some are without families altogether. From one-sixth to one-third, in general from one-fourth to three-tenths, of the blind are discovered to be supported by their families. If relatives or friends are included, the proportion may rise to as much as two-fifths, or even two-thirds.² In other words, the larger portion of the blind without means of their own are cared for by their families, relatives, or close friends.

Support of the blind by private means other than those of kin or friends is of several kinds: direct almsgiving, relief by organized charitable agencies, permanent care in some home or other institution, and pension or compensation in some form from private sources. The total amount of assistance of this nature it is impossible to ascertain. Possibly in most communities the proportion of the blind so affected does not exceed one-eighth, in many one-twentieth. Almsgiving probably constitutes the leading form of such relief; the practice

¹ See *post*, p. 260.

² Of the blind in Connecticut 75.3 per cent are regarded as having no assistance or relief from outside; 4.9 per cent, as in receipt of private aid; 9.1 per cent, as in receipt of public aid; and 10.6 per cent, as in institutions. Of the blind in Rhode Island 39.9 per cent are said to be in "no need." In Maryland 10.0 per cent are declared to be well cared for. In Michigan 74.4 per cent of the blind are found to be supported by themselves or their families. In Massachusetts (1906) 73.8 per cent of the blind are reported to be living in their own homes; 10.0 per cent, in private families; 8.2 per cent, in almshouses; 5.3 per cent, in other public institutions; and 2.7 per cent, in private institutions. In Minnesota a little over one-half of the blind living with their families are said to be in "comfortable circumstances." In California of the blind with relatives, two-thirds have good living standards, and of those away from home over one-half; of such relatives one-third have ample means, one-sixth being well-to-do; with them about one-half of the blind constitute an economic problem; a little over one-tenth are dependent on their immediate families. Of former pupils of the Pennsylvania Institution 56.3 per cent are reported as living with relatives; 10.1 per cent, in homes or institutions; 4.4 per cent, with friends; 5.0 per cent, with strangers; and 24.2 per cent, as unknown. See (in addition to previous references) Report of Connecticut Board of Education of Blind, 1930, p. 120; Statistical Information Relating to Insane, Deaf and Dumb, and Blind, Michigan, 1916; California Department of Social Welfare, "The Adult Blind in California," 1929, pp. 5-7; Publications of Pennsylvania Institution, no. 3, June, 1924, p. 20, "What Can the Blind Do?"

is well-nigh universal, though varying widely in different areas.¹ Aid by formal charitable societies hardly exists outside of the populous centers, being here merely incidental to their regular activities.² Care of the blind in special homes, chiefly in special homes for the blind, is of negligible extent in most areas, being appreciable only in localities where such special homes are in existence (mostly the larger cities). The proportion so provided for in the States having special homes ranges from less than 1 per cent to one-tenth, usually hardly over 2 or 3 per cent.³ To these may be added a small number of the inmates of industrial homes for the blind (real wage-earners not being included). The proportion of the blind in general homes or other private institutions for the seeing, chiefly homes for the aged, is very small, probably seldom as much as 1 per cent.⁴ Aid from private sources in the form of pension, compensation, and the like probably hardly anywhere affects more than 1 or 2 per cent of the blind.

Public aid to the blind is of two forms: provision in some public institution, most often the almshouse, with a certain portion otherwise affected also in hospitals or similar public institutions; and direct pecuniary aid, as outdoor relief or grants under the name of pensions. The proportion of the blind supported by public aid is from less than one-eighth to more than one-half, usually about one-fourth. It varies greatly as between different States or different communities, being usually highest where a pension system prevails. In its absence the most frequent proportion is about one-sixth or one-fifth.

Care in almshouses has until comparatively recent years been the most frequent form of public aid for the blind. Such have long been known as the retreat of the sightless, and have been their one refuge when all else has failed.⁵ In many communities the blind are recognized as a distinct source of the almshouse population.⁶ Of the entire

¹ On mendicancy among the blind, see *post*, p. 459.

² Of those helped by the Charity Organization Society of New York, 3.5 per cent are blind or with seriously defective vision. Report, 1927, p. 16.

³ In some cases reference is to the number in the special homes (considered in Chapter XL).

⁴ In Pennsylvania the proportion is 0.7 per cent.

⁵ A particular reason for the large number of the blind in almshouses lies in their age constitution—the proportion of the blind in the advanced years of life being abnormally high. Of the blind found in almshouses in New York State 92.1 per cent were over fifty, and 59.1 per cent over seventy. The percentages having lost sight before twenty in 1879, 1895, and 1905 were, respectively, 12.0, 11.6, and 9.1. Report of New York Institute, 1879, p. 25; 1895, p. 25; 1906, p. 33; W. B. Wait, "Three Studies in Sociology of Blind," 1906.

⁶ In certain cases we are advised to the effect that "many helpless blind persons are cared for at the county expense." In several of the larger almshouses special wards are provided for the blind. In New York City the name given was once "asylum for the indigent blind." It was said that "the department was appropriately named." Report of New York Commissioner of Public Charities and Corrections, 1870, p. 252. On the matter of the blind in almshouses, see Proceedings of American Association of Instructors of Blind, 1886, p. 40.

number of inmates of almshouses in the United States 4.0 per cent are blind (1910).¹ Stated differently, 5.9 per cent of the blind of the country are in almshouses.² In certain States the proportion varies from 2 to 9 per cent, usually from 3 to 7 per cent.³ In hospitals for the insane of the entire country are 0.9 per cent of the total number of the blind. In institutions for the feeble-minded are 0.2 per cent.⁴ In individual States the proportion of the blind in the former kind of institution is seldom over 1 or 2 per cent, and in the latter generally under 1 per cent.⁵

In outdoor relief in certain counties, cities, and towns the blind, often without special legal enactment, are included to a greater or less extent.⁶ Such relief seldom reaches more than a small percentage of the blind, though occasionally as much as one-tenth.⁷

Public pensions for the blind in general are of the more recent years. Laws providing for them have now been enacted in a number of the States. They are for the most part under the direction of the several counties, with more or less of State supervision. By cities or other local units subventions are also granted from time to time for the aid of individual blind persons. In addition, there are pensions by the Federal Government for persons blinded in war service, on the whole affecting but a very small portion of the blind. The proportion of blind persons assisted varies greatly among different States having the pension system, ranging from a few per cent to over one-half—with possibly an average of about one-fourth.⁸

GENERAL CONCLUSIONS AS TO ECONOMIC CONDITION OF BLIND

From all that has been said, we are left to conclude that but a small proportion of the blind are able to earn a living by their own ef-

¹ Report of Census Bureau—"Paupers in Almshouses: 1910," 1915, pp. 42, 114. In 1880 the percentage was 4.2, in 1890 4.2, and in 1904 3.6.

² According to the special census of the blind the proportion was 3.3 per cent. "The Blind in the United States: 1910," 1918.

³ See reports of State boards of charities, boards of control, etc. See also Report of Wisconsin Agency for Blind, 1923, p. 4.

⁴ *Ibid.*, pp. 68, 69. See also "Insane and Feeble-minded in Institutions: 1910," 1914, pp. 190, 204, 205. Of all the inmates in institutions for the feeble-minded, 0.6 per cent are blind, varying in different geographical divisions from 0.3 per cent to 10.5 per cent.

⁵ In New York State 8.5 per cent of the blind at one time were in public institutions, 7.2 per cent in private institutions, and 3.5 per cent in hospitals for the insane. Report of New York Commission for Blind, 1906, pp. 203-554.

⁶ Reference is to be made to certain forms of aid to the blind, as in the remission of certain taxes, permission to beg, etc. See Chapter XVIII. In Connecticut 15.0 per cent of the blind apply for the exemption from taxation provided in the law. Report of Connecticut Board of Education of Blind, 1926, p. 116.

⁷ Expenditures for relief of the blind (including persons) in 30 metropolitan centers in the United States in 1931 amounted to \$1,089,648, or 11.1 per cent of expenditures for relief. Children's Bureau Publications, no. 209, 1932, p. 5.

⁸ The subject of pensions for the blind is considered in Chapters XLVII, XLVIII.

forts alone. A certain part, it is true, are found in a rather varied list of callings; and some fare better than others in their general powers and attainments, and consequently in their earning capacity, this being to a certain degree the more likely in cases where the loss of sight has occurred in early years, and where educational advantages have been availed of. But for the greater number of the blind the economic showing must be characterized as an unfavorable one, that of many females being particularly so. Even in industries which have been regarded as especially suitable for them, their standing appears on the whole to be scarcely bettered.

According to the findings for the country at large, only about one-seventh of the blind over ten years of age are gainfully employed, which is only a third of the proportion for the general population. Not more than one-thirteenth are discovered to be actually able to support themselves. According to investigations in certain individual States, about one-sixth of the adult blind are self-supporting, and a like proportion so in part. For most of those nominally engaged in industrial activity the returns are meagre at best. Annual earnings of almost three-fifths of males amount to less than \$500, and of almost two-fifths to less than \$300. In fact, the receipts of many are so slight that the occupations from which they are derived may be considered as but assisting in or contributing to self-support.

For their sustenance in life the large majority of the blind have thus to depend upon outside sources. A small part—perhaps one-tenth—have resources of their own, and are accordingly able to take care of themselves. The remainder, comprising two-thirds or three-fourths of the adult blind, are compelled to seek support in greater or less measure at the hands of others—from their own kith and kin, from the charitably inclined of the community, and failing this, from the state in one form or other.

The situation comes about from the fact that most persons deprived of the sense of sight are deprived of such a prime essential that they are unable to engage in industrial employment as other men do who are not so handicapped, and thus to provide themselves, unassisted and single-handed, with the necessities of life. The exigencies are in but small degree altered with those upon whom blindness falls in adult years, and who find it incumbent to adapt themselves to changed conditions, meeting difficulty alike in following the trades to which they have been accustomed, and in taking up new tasks. With all this there goes the important concomitant factor that very many of the blind, in fact an abnormally large proportion of them, are elderly or aged, blindness being, as we have had occasion to point

out, a peculiar incidence to advancing years; and most of such in any circumstances are too old to work. With a certain portion, finally, there are additional infirmities or disabilities to be borne.

Yet, adverse as may appear the economic showing of the blind, perhaps the better interpretation of the matter is that, when their handicap is fully considered, this showing is, after all, a really creditable one. The circumstance that the blind can contribute to their support to the extent to which they do should be taken as attestation to the efforts put forth by them in a struggle which bears so heavily against them.

We have to leave our review of the economic condition of the blind, then, with the conviction that only a very small proportion of them may be regarded as full wage-earners, and a self-supporting element of the population. A certain portion are able to look out for themselves, particularly if in the vigor of life, by dint of their own efforts, and another portion are able to provide for themselves from their own resources; but these are distinctly in the minority. For the most part the blind can acquire but little of the world's possessions; and for what they have thereof they must largely look to others.¹ The life of many of them is thus commingled with privation, an added burden which they have to bear. A status of dependence is most often that of the blind in the community.

¹ "An overwhelmingly large proportion [of the blind] are dependent." Report of Ohio Commission for Blind, 1908, p. 21. "The condition of the blind as a whole is deplorable, many being destitute," Ohio Bulletin of Charities and Correction, xv., 1909, 1, Feb., p. 36; *Outlook for Blind*, ii., 1908, p. 108. On the general economic condition of the blind, see also *ibid.*, viii., 1915, p. 160; *Ohio State Medical Journal*, v., 1909, p. 466; vii., 1911, p. 435; *New Jersey Review of Charities and Corrections*, vii., 1908, p. 150; Louis Stricker, "Blindness in Hamilton County," pp. 63, 65, 88 (Studies from Helen S. Trounstone Foundation, i., 3, Sept., 1918, Cincinnati); Florina Lasker, "Care and Treatment of Jewish Blind in City of New York," 1918 (Bureau of Philanthropic Research, Publication no. 3); Central Council of Social Agencies, Preliminary Survey of Conditions of Blind in Cook County, Chicago, 1918; Report of New York Commission for Blind, 1904, p. 46; Report of Maryland Commission for Blind, 1906, p. 6. See, in addition, reports in general of commissions, associations, and other organizations for the blind.

NOTE TO CHAPTER XVII.—For a full statement of the economic condition of the blind, this chapter should be read in conjunction with Chapters XLII–XLVI, where the present movements for their industrial betterment are considered.

CHAPTER XVIII

LEGAL TREATMENT OF BLIND

GENERAL ATTITUDE OF LAW TOWARD BLIND

In ascertaining the general status of the blind in the United States, early attention is to be directed to the position to which they have been assigned by the state. The attitude of the state towards the various elements that compose its population is represented primarily in the law; and in the special treatment accorded by it to the blind we may determine the regard in which they are publicly held.

The law in the United States is to be discovered in constitutional provisions, in legislation, and in judicial decisions. With the blind concern is found mainly in the sphere of legislation. Statutory provisions affecting them may be grouped in four divisions. The first has reference to the instruction of the blind. The education of blind children has been provided for practically on the same basis and on the same terms as education for children generally, it being in this respect that the state has occupied itself principally for the greater part of the period of organized work for the blind—a care found to be reënforced in the Constitutions of half the States. Since the beginning of the twentieth century attention has been given in some measure, so far as the carrying of appropriations has been involved, to the extension of means for intellectual improvement to the adult blind, in the providing of printed matter, library facilities, and home teaching, which may be considered as instruction conducted on a scale to include all. In the second division is the action taken by the State in respect to the blind in the creation of special public commissions or similar agencies to be concerned in their general welfare, which are also a development of later years. In the third division are the several forms of relief devised, indicating that the blind are looked upon as an element dependent in greater or less degree upon the community. In the fourth, or last, division are embraced all other relations of the law to the blind, of diverse order, and most of indirect character—the greater part being for their benefit or for their protection, and the lesser part being rather discriminatory with respect to them.

The provisions which the state makes for the education of blind children will be duly examined when we come to consider this education, as will the provisions which it makes for the intellectual assist-

ance of the adults. Similarly, will be reserved our treatment of commissions and like agencies for the blind for its proper place. For the present our attention will be directed to certain phases of the material aid which it has been thought desirable to extend to the blind, together with the remaining relations which the law has to them.

POSITIVE LEGAL MEASURES DESIGNED TO ASSIST BLIND

In the manifestations of its concern for the material relief of the blind, public action may be said to have assumed two forms, one of which we may call positive aid, and the other negative aid. The positive aid consists of a direct pecuniary allowance on behalf of the blind, which is of various kinds. The negative aid lies chiefly in the remission for the benefit of the blind of some legal imposition or restriction which is obligatory upon the normal elements of the population.

The most important legal measures designed to be of positive or substantial benefit to the blind we need not discuss here, saving them in the main for more particular treatment in our examination of present practical efforts to better the condition of the blind. It will suffice in this place to say that such action relates to the extension of some form of pecuniary advance or some sort of bounty, and includes whatever provision is embraced in general "outdoor" relief, aid to homes for the blind, assistance to various organizations laboring in behalf of the blind, and a regular pension system or indemnities for the loss of sight.

The main form of positive assistance which need be mentioned at this stage is the inclusion of the blind in relief of a general character, that is, as part of the general system of public charity for the needy, which has had a place in the history of practically all the American Commonwealths.¹ Here reference is most often to the poor having some "bodily infirmity." In this there has as a rule been little special attention to the blind, they being comprehended among the classes to whom the state has been willing to accord succor. In a few States, however, there is particular mention of the blind as objects of public consideration, together with other classes which are supposed to be unable to support themselves, as the lame, the aged, the sick, the disabled, and the like. In Arkansas² such persons are expressly required to be maintained by the counties in which they have

¹ The first legal reference to the blind in America, so far as discovered, was in the year 1650, when the Colony of Maryland levied a special tax for the benefit of the blind, together with the maimed and the lame. *Proceedings and Acts of General Assembly of Maryland*, 1650, no. 16 (*Archives of Maryland*, 1883, p. 296).

² *Dig. Stat.*, 1921, § 8159.

their residence; and in Missouri they are deemed to be "poor," and consequently entitled to suitable relief.¹ In Georgia blind paupers, as well as insane, idiotic, and deaf and dumb paupers, are to be "dealt with according to the laws relating to them."² In several States, as Alabama,³ New York,⁴ and Wisconsin,⁵ the blind are specifically included among the classes whose support by relatives is required by law.

There are, in addition, a few other instances found here and there of more or less substantial assistance for the blind. In some States where reference is made to the dependency of children to entitle them to the benefit of certain laws, as workingmen's compensation laws, mothers' pension laws, etc., such children must be under a particular age except in case of physical or mental incapacitation, in which event dependency is regarded as continuing. In New York blindness is specified as a form of such incapacitation in respect to death benefits from workingmen's compensation laws.⁶ In Michigan a mother with dependent children who has a blind husband is entitled to a mother's pension.⁷ In this State also blind persons who are county charges may be sent to the State industrial institution for the blind.⁸ In Pennsylvania similarly blind persons may be provided for at special institutions for the blind instead of in almshouses.⁹

The final form of special consideration shown the blind is the enactment of the Federal Government authorizing railways and other common carriers to grant free transportation to a guide accompanying a blind person.¹⁰

NEGATIVE MEASURES TO ASSIST

The negative type of aid to the blind, no less than the positive type, is indicative of the general regard in which the blind have been held. In a number of States the law has come to their assistance in a more or less definite way, without involving any material subvention.

¹ Rev. Stat., 1889, § 7238; 1929, § 12951.

² Code, 1861, § 724; Ann. Code, 1926, § 562.

³ Dig. of Laws, 1836, p. 342; Code, 1923, § 2803.

⁴ Laws, 1898, ch. 399; Code Crim. Proc., 1927, § 914.

⁵ Rev. Stat., 1849, ch. 28; Laws, 1919, ch. 345; Stat., 1931, § 49.11. The blind are also mentioned among the classes in almshouses to be investigated by the State board of control. Stat., § 46.16.

⁶ Laws, 1929, ch. 303; 1931, ch. 291. Incapacitation must be total.

⁷ Laws, 1931, ch. 30; Comp. Laws, 1929, § 12840.

⁸ Stat., 1913, § 3493; Comp. Laws, 1929, § 8012. They could formerly be cared for at county expense.

⁹ Laws, 1927, ch. 54; Pa. Stat., Supp., 1928, § 18611-907-908. See also Laws, 1836, p. 475.

¹⁰ Stat., 1927, ch. 217. See 60th Cong., 1st sess., Sen. Rep. 894, 1926; 2nd sess., H. Rep. 870 (hearings on Sen. 2617), 1927. On legislation regarding the blind, see *Ophthalmology*. xiii., 1917, p. 597. See also P. F. Skottowe, "Law Relating to Blind" (England), 1933.

The principal means are the allowing of the blind to ask for alms, the exempting of them from the usual regulations as to mendicancy, the remitting in respect to them of certain personal or property taxes, and the permitting of them to escape certain duties which are imposed on others—benefits forbidden or indulgences denied to the general population.¹

The order of legislation most frequently found is that in which the law in respect to tramps or vagrants is declared not to apply to the blind. The purpose of such enactments is to prevent interference with the privilege of the blind to beg or to solicit alms, which is a frequent practice of tramps and "vagabonds," the view apparently being that this privilege should be left with the blind at all events.² In the exception females and minors are sometimes included, and occasionally the crippled, the deaf, or other classes.³ Legislation of this character is found in particular in the New England States, all but one of them having some such measure: Maine,⁴ New Hampshire,⁵ Massachusetts,⁶ Rhode Island,⁷ and Connecticut.⁸ Other States with the law are New York,⁹ Pennsylvania,¹⁰ Delaware,¹¹ Ohio,¹² Indiana,¹³ Alabama,¹⁴ Minnesota,¹⁵ Nebraska,¹⁶ and North Carolina.¹⁷

Next, in certain States the blind are allowed to peddle without being required to take out a license for so doing, a measure designed to give them an advantage which others do not have, or to be compensatory to some extent for their deprivation. With the blind are usually embraced other classes, as the crippled, disabled, or war veterans.

¹ Now and then there has been some local ordinance or regulation adopted which is designed to be of aid to the blind, as where traffic policemen are required to respond to the whistle of a blind man when in need of help in crossing a street.

² The reason for making the exemption is thus explained by a Court, though in a case not directly concerned with the blind: "Females and blind persons are not included within its terms [the terms of the law]. This, presumably, from considerations of humanity, but principally because but little if any danger is threatened from such." *State v. Hogan*, 63 Ohio, 202, 58 N. E., 572, 81 Am. St., 626, 52 L. R. A., 863 (1900).

³ The tenor of the statutes may be indicated from that which is in force in the State of Massachusetts: "Whoever, not being a minor under seventeen years of age, a blind person, or a person asking alms within his own city or town, who roves about from place to place begging, or living without labor or visible means of support, shall be deemed a tramp."

⁴ Laws, 1880, ch. 213; Rev. Stat., 1930, p. 1635.

⁵ Laws, 1878, ch. 38; Pub. Laws, 1925, p. 1409.

⁶ Laws, 1880, ch. 257; Rev. Laws, 1932, p. 3191.

⁷ Laws, 1880, ch. 806; Gen. Laws, 1923, p. 1725.

⁸ Laws, 1879, ch. 59; 1893, ch. 97; Rev. Stat., 1930, § 6263.

⁹ Laws, 1898, ch. 664; Code Crim. Proc., 1927, § 887a. The law does not apply to cities of the first and second classes.

¹⁰ Laws, 1879, ch. 34; Pa. Stat., 1920, p. 2081.

¹¹ Rev. Stat., 1915, § 3549.

¹² Ann. Gen. Code, 1931, § 13408.

¹³ Rev. Stat., 1881, § 2135; Ann. Stat., 1926, § 2828.

¹⁴ Laws, 1881, p. 142; Code, 1926, § 5575.

¹⁵ Laws, 1927, ch. 292; Minn. Stat., 1927, § 10534.

¹⁶ Laws, 1879, p. 65; Comp. Stat., 1931, § 28-1115.

¹⁷ Cons. Stat., 1924, § 4461.

This enactment is found in six States, two in New England and four in the South: Maine,¹ Connecticut,² Georgia,³ Arkansas,⁴ Louisiana,⁵ and Florida.⁶ In the State of New York a special license may be granted free of charge to the adult blind in cities of over a million population for selling goods or newspapers in the public thoroughfares.⁷ In other States there have been similar provisions.⁸ In New Mexico the commissioners of any community ditch are given power to allow, at their discretion, to a blind man or to the widow of such, if having an interest and a water right, free irrigation for an area containing not more than three acres.⁹ (In certain cities the blind are granted privileges for selling articles on the streets.)

Again, in certain States there have been permitted exemptions from taxation of one kind and another in favor of the blind. In Mississippi the blind, with certain other classes, are exempted from the payment of a poll tax, not only by legislative enactment, but by a provision in the Constitution of the State as well.¹⁰ In Maine the blind are exempt from the payment of a poll tax;¹¹ and in Georgia also in case there is no property held worth more than \$500.¹² In Tennessee there is exemption from the payment of a poll tax for schools in favor of the blind, the deaf, and persons incapable of labor, while to the blind is extended a further indulgence in the remission of privilege and license fees.¹³ In Alabama property to \$1000 is exempt from taxation.¹⁴ In North Carolina the blind are free from regular business licenses.¹⁵ In Connecticut the blind are exempted from a tax on property up to \$3000, provided that by reason of their blindness they are unable to support themselves and their families; while their products are ex-

¹ Laws, 1889, ch. 298; 1893, ch. 282; 1901, ch. 277; Rev. Stat., 1930, p. 1635.

² Laws, 1878, p. 293; Rev. Stat., 1930, § 2928. The law applies only to the blind selling their own wares.

³ Ann. Code, 1926, § 994. The maintenance of amusement resorts is included.

⁴ Laws, 1868, p. 5; 1899, ch. 185; 1911, ch. 334; Dig. Stat., 1921, § 9842.

⁵ Laws, 1924, ch. 130, Ann. Rev., Supp., 1926, p. 142. Capital or property must not be in excess of \$2000.

⁶ Gen. Laws, Supp., 1930, § 1279 (6089).

⁷ Laws, 1899, ch. 631; 1925, ch. 393; 1930, ch. 120; Cons. Laws, 1930, pp. 948, 1657. The applicant must have been a resident of the city for three years. Wares of the blind may be specially stamped or marked.

⁸ See Laws of Alabama, 1895, p. 885; Code, 1907, p. 970; Laws of Minnesota, 1921, ch. 434; 1925, ch. 236.

⁹ Laws, 1912, ch. 36; Stat., 1927, § 151-440.

¹⁰ Laws, 1880, p. 20; Code, 1927, § 6855; Constitution, 1890, sec. 243.

¹¹ Laws, 1907, ch. 52; Rev. Stat., 1930, p. 258. The law was expressly amended to include the blind.

¹² Laws, 1869, p. 162; 1927, p. 57; Ann. Code, 1927, §§ 993(4), 994. The exemption also embraces occupation tax.

¹³ Laws, 1883, ch. 105; 1895, ch. 120; 1901, ch. 87; Ann. Code, 1931, §§ 1082, 1251.

¹⁴ Code, 1928, § 3022.

¹⁵ Laws, 1933, chs. 53, 339. Income is not to exceed \$1200. Mattress renovation requires no license.

empt from license fees, and their tools from attachment in processes of law.¹ In Texas the blind and certain other classes are exempt from the payment of the poll tax, which for the general population is a prerequisite to the right to vote.² In a few other States there have been similar provisions.³

The final form of exemption granted to the blind is that which releases them from the duty of work on the public roads, an exemption extended also to the deaf, the disabled, or other classes. This is found in the States of Mississippi⁴ and Oklahoma.⁵ There have been similar enactments in other States.⁶

RELATIONS OF LAW OTHER THAN IN RELIEF

The relations of the law to the blind other than those involving direct or indirect material aid or relief to them are several. One may be said to be concerned with further assistance to them, though not of a substantial character—the providing of aid for blind voters at the polls. Another may be considered as, on the one hand, for the advantage of the blind, and, on the other hand, as discriminatory with respect to them, this having to do with the making of wills by them, and with their acting as witnesses to such. The third is to be regarded as purely discriminatory—the imposition of a bond upon the admission into a particular State of immigrants who are blind, or the denial to them of the full provisions of certain industrial laws. The two remaining relations bear upon the blind less directly, affecting rather other persons who might do them harm, though intended none the less to be of benefit to them or for their protection. In one punishment is prescribed for the doing of injury to the person of the blind; in the other the strong arm of the law is invoked for the repression of impostors, or persons able to see who pretend to be blind for the purpose of soliciting alms.

AID TO BLIND IN VOTING

In practically all the States of the Union help is allowed at the voting places to the infirm or disabled. The right would thus by im-

¹ Laws, 1867, p. 156; 1876, ch. 56; 1883, ch. 205; 1895, ch. 303; 1899, ch. 9; 1903, ch. 62; 1911, ch. 184; 1913, ch. 44; 1919, ch. 306; 1925, ch. 245; 1927, ch. 319; Gen. Stat., 1930, §§ 1050, 1076-1079, 1163 (17), 1167, 1169, 2292-2295, 4650.

² Laws, 1882, p. 18; 1905, p. 520; Comp. Stat., 1930, §§ 2959, 2960, 7046.

³ In Indiana the blind with the deaf have been exempted from the payment of both a poll tax and a tax on property up to \$500, besides being discharged from road duty. Laws, 1848, ch. 76. Under a Federal enactment articles manufactured in institutions for the blind or sold for their benefit were at one time exempted from the internal revenue tax. Stat., 1866, p. 147; 1867, p. 475.

⁴ Code, 1857, p. 174; Ann. Code, 1930, § 6192.

⁵ Laws, 1909, p. 491; Comp. Laws, 1921, § 10011.

⁶ See Laws of South Carolina, 1911, ch. 27; Civil Code, 1912, § 1976.

plication be granted to the blind. In all the States, however, with the exception of South Carolina, express right of suffrage is conferred upon the blind: they are directly mentioned as persons to whom aid in marking the ballot is permissible. In the larger number of States this is to be done by some designated election official. In the remainder the blind voter is entitled to select whomever he wishes for the purpose.¹ These States are Alabama, California, Colorado, Delaware, Illinois, Massachusetts, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Pennsylvania, and Wisconsin.² In the Constitution of Kentucky assistance for the blind in voting is guaranteed.³

PROVISION FOR WILLS OF BLIND

With respect to the making of wills by the blind and with respect to their capacity to act as witnesses for such, it has very rarely seemed necessary to place special enactments upon the statute books, it being thought no doubt that the matter was sufficiently dealt with in the usual laws on the subject. In one, Georgia, there is express provision establishing the testamentary right of the blind.⁴ In Louisiana, on the other hand, an adverse position is taken in regard to their being witnesses to a will, it being declared that they are "absolutely incapable" for such purpose.⁵ In Illinois blind persons, if witnesses to a will, must give proof of handwriting.⁶

MEASURES DISCRIMINATORY WITH RESPECT TO BLIND

Full discrimination as to the blind, if it may be so denominated, has been exercised formerly in connection with immigration laws, where it has been feared that incoming blind persons might become public charges.⁷ In Georgia it is provided that bond may be exacted of commanders of vessels or of the managers or proprietors of "theatrical, circus, or other migratory companies" who may leave within the State, as likely to be dependent upon it, blind persons, as well as persons of other classes.⁸ In certain States, which at one time were attempting individually to regulate the immigration of aliens entering

¹ It is this arrangement which the blind prefer, and in some instances have sought to effect.

² See L. S. Rand, "Directory of Activities for Blind in United States and Canada," 1932.

³ Constitution, 1891, sec. 147.

⁴ Code, 1861, § 2381; Ann. Code, 1926, § 3844. Possibly the law refers rather to persons who are both blind and deaf.

⁵ Civil Code, 1838, § 1584; Ann. Rev., 1915, § 7137.

⁶ Rev. Stat., 1931, p. 2762.

⁷ It may be noted that the present United States immigration laws make no reference to the blind as such, though a bond may be required for persons likely to become public charges. See P. F. Hall, "Immigration," 1906, p. 258.

⁸ Code, 1861, § 720; Ann. Code, 1926, §§ 559-561.

by water, there have been enactments requiring report to the port authorities by the owners or commanders of vessels, in regard to blind passengers, together with other classes, and the rendering of sufficient bond to prevent them from becoming public charges.¹ These States are New York,² Massachusetts,³ Louisiana,⁴ and California.⁵ On the other hand, however, it may be noted that at present in New Jersey the law with respect to the bringing of dependent children into the State without the exaction of bond has been amended in favor of certain blind children coming to special homes for them.⁶

A more recent form of discriminatory legislation with respect to the blind may be said to lie in the provisions of the workmen's compensation laws of certain States to the effect that blind employees may elect not to be subject to, or may waive rights to benefits from, such laws in case of an injury incurred in consequence of their blindness.⁷

MEASURES PROTECTIVE OF BLIND AGAINST ABUSE

Legislation designed to be for the protection of the blind, though relating more directly to people with sight who might do them injury, is of two kinds. The first is the shielding of their persons from abuse or ill-treatment. It has probably had its inception in the belief that the blind, being in a peculiarly defenceless condition, should be rendered safe from all possible harm. The guarding of blind children is felt to be especially called for; and it is to such that existing enactments apply. In Virginia it is made a misdemeanor to abduct or kidnap, or to aid in the abduction or kidnapping of, "inmates of the deaf, dumb, and blind hospitals of the State."⁸ In Wisconsin it is an offence for officers in charge of institutions for the blind and other classes to abuse, neglect, or ill-treat any of the inmates thereof, or to allow them to be so used.⁹ In Florida blind persons, together with

¹ The basis of these enactments seems to have been the fear that the blind, with other classes, were being dumped on American shores by foreign nations. See Report of New York State Board of Charities, 1880, p. 41.

² Laws, 1847, ch. 195; 1849, ch. 350; 1851, ch. 523; 1866, ch. 737; 1871, ch. 475; 1881, ch. 427. In this State at one time it was provided that "no pauper who has not resided at least one year next prior to application for his or her admission into any State asylum for the idiotic, blind, insane, or deaf and dumb shall be admitted as an inmate thereof." Laws, 1880, ch. 549.

³ Laws, 1852, ch. 279; 1872, ch. 169; Pub. Stat., 1882, p. 468.

⁴ Laws, 1869, ch. 303; Rev. Stat. Laws, 1870, § 1722.

⁵ Laws, 1852, ch. 78; Gen. Dig., 1864, § 3618.

⁶ Laws, 1912, ch. 201; 1918, ch. 147; Comp. Stat., Supp., 1924, p. 338.

⁷ See Illinois Rev. Stat., 1931, p. 1405; Kansas Rev. Stat., 1929, § 44-546; Missouri Rev. Stat., 1929, § 3279; Ohio Gen. Code, 1930, § 1465-97; Wisconsin Stat., 1931, § 102.08. In some States blindness is not expressly mentioned.

⁸ Laws, 1908, ch. 61; Code, 1930, § 4414. Similar protection is afforded to inmates of hospitals for the insane. See also Laws, 1886, p. 417; 1896, p. 673; Code, 1904, § 3680.

⁹ Laws, 1872 ch. 176; 1880, ch. 265; 1911, ch. 375; Stat., 1931, § 340.58.

certain other classes, may not be sent to the State reform school.¹ In Missouri guardians may be appointed for the blind.²

MEASURES PROTECTIVE AGAINST IMPOSTORS

The second form of statutory action of indirect character for the protection of the blind is of greater importance, its aim being the prevention of imposture under the guise of simulated blindness. It not infrequently happens that dishonest persons possessed of sight pretend to be blind in order to work upon the sympathies of the charitably inclined for their financial profit; and not always is the public able to perceive the fraud being perpetrated. The matter is, however, a very serious one, amounting in fact not merely to the practicing of cheating, but to positive and grave injury to the blind.³ In a number of States direct legal cognizance has been taken of the evil—in all since 1909—though in most other States the offense is no doubt included under some such general charge as “vagrancy,” “imposture,” or “false personation,” and is to be punished accordingly. The States that have taken special action are Illinois,⁴ Indiana,⁵ Michigan,⁶ Minnesota,⁷ Missouri,⁸ Nevada,⁹ New Mexico,¹⁰ North Carolina,¹¹ North Dakota,¹² Ohio,¹³ Washington,¹⁴ and Wisconsin.¹⁵ In them the impersonation of the blind, together with the deaf, the crippled, or persons otherwise physically defective, is expressly forbidden.¹⁶

¹ Laws, 1905, ch. 5388; Comp. Laws, 1927, § 8644.

² Rev. Stat., 1929, § 379.

³ On the matter of impostors representing themselves to be blind, see *International Journal of Surgery*, xxii., 1909, p. 282; *Ophthalmology*, ix., 1912, p. 81; *Journal of Indiana State Medical Association*, x., 1917, p. 422; *Journal of Florida Medical Association*, iii., 1917, p. 204; *New York State Journal of Medicine*, xviii., 1918, p. 487; *Canadian Medical Association Journal*, xiii., 1923, p. 903; *U. S. Naval Medical Bulletin*, xviii., 1923, p. 449; *Medical Press and Circular*, clvi., 1918, pp. 317, 334; *Journal of Tennessee Medical Association*, xi., 1918, p. 150; *Nation's Health*, vi., 1924, p. 243; *Volta Review*, xx., 1918, p. 101; Proceedings of National Conference of Social Work, 1899, p. 413; R. A. Witthaus and T. C. Becker, “Medical Jurisprudence,” 1896, iv., p. 19.

⁴ Laws, 1915, p. 384; 1929, p. 937; Rev. Stat., 1931, p. 1024.

⁵ Laws, 1915, ch. 154; Stat., 1926, § 2955.

⁶ Laws, 1917, ch. 135; 1931, p. 668; Comp. Laws, 1929, § 17182.

⁷ Laws, 1909, ch. 487; 1911, ch. 257; Stat., 1927, p. 2048.

⁸ Laws, 1915, p. 267; Rev. Stat., 1929, § 4309.

⁹ Laws, 1915, ch. 2.

¹⁰ Laws, 1917, ch. 59; Stat., 1929, § 35-1924.

¹¹ Laws, 1919, ch. 104; Cons. Stat., 1924, § 4286.

¹² Laws, 1917, ch. 64; Comp. Laws, Supp., 1925, §§ 997a1, 997a2.

¹³ Laws, 1915, p. 207; Ann. Gen. Code, 1931, § 13409-1.

¹⁴ Laws, 1915, ch. 62; Comp. Stat., 1923, § 2688-1.

¹⁵ Laws, 1917, ch. 151; 1925, ch. 4; Stat., 1931, § 343.253.

¹⁶ The penalty attached to the violation of the statute is usually a fine of not more than \$200, or imprisonment for not more than 6 months, or both such fine and imprisonment. In most cases the offense is declared to be a misdemeanor, and in some added to the offenses constituting vagrancy or imposture. These laws were in large part secured through the efforts of the deaf.

JUDICIAL DECISIONS IN GENERAL AFFECTING BLIND

The next method of discovering the attitude of the law towards the blind, after the examination of statutory legislation, is through the pronouncements of the courts in respect to them. Judicial decisions relating to the blind appertain for the most part to three matters: the validity of the wills made by them; the extent to which they may claim damages for injuries which they would not have received if they had not been blind; and the extent to which their rights or duties as citizens may be affected by their want of sight. Other decisions have to do with various questions. Those concerned with schools, or with pensions, or with other particular topics in connection with work for the blind are considered in their proper places.

DECISIONS RELATING TO WILLS

The course of the law respecting the wills of the blind is in keeping with its usual policy, and the rules adopted are a part of the general principles applying to wills. The interests of the blind and of the state are alike held in view. The rights of the one are to be preserved, while protection is to be afforded to the other against the possibility of fraud. The courts have always been willing to accord a full hearing to the wills of the blind. There has been no demurring to their prerogatives in the matter, and no question has ever been raised as to their legal claims. As stated by the Court in one case, "the fact of the blind making wills wherever spoken of is assumed to be an undeniable fact;" and "we may safely conclude that it is settled law that mere blindness does not incapacitate a man from making a will."¹

In nearly all States, however, there are very careful and rigid regulations governing the execution of wills, in the making of which sight plays a most important part. In the absence of this sense an opportunity for deception is presented which the courts cannot disregard, and to which they must pay due heed. Yet to wills made by the blind there has been no averseness to extending all the consideration possible; and to defeat such, there must have been open or flagrant departure from the general rules of the law. At one time the courts were inclined to favor oral wills made by blind persons, in the belief that the danger of misrepresentation or collusion was thereby minimized, and that there was thus greater certainty of genuineness. Later the courts became willing to accept written wills, insisting only

¹ *Ray v. Hill*, 3 Strob. (S. C.), 297, 49 Am. Dec., 647 (1848). See also *In re McCabe's Will*, 134 N. Y. Supp., 682, 75 Misc., 35 (1911).

upon special assurances of their having been read over before proper witnesses, and often requiring that they be signed by the witnesses in the presence of the testator and in each other's presence. Today a rather liberal attitude on the whole prevails with regard to the testamentary acts of the blind. Though on the offering of their wills for probate, there is occasion for careful scrutinizing, especially as to the interest of those attesting to the instrument, yet if it appears that such testaments have been sufficiently or reasonably safeguarded, and there is little if any evidence of fraud or of undue influence, the courts are generally found prepared to dispense with unnecessary formalities, and to allow their wills to stand. In fact, so ready have the courts come to be to uphold the wills of the blind that where no proof is adduced that they have not been executed in good faith, the fact that they have not been read over to the testator, or that they have not been read to him in the presence of the subscribing witnesses, may be excused.¹ Today it may be said that, provided that all other essentials are complied with, and all the precautions in the circumstances have been taken, the demands of the law are satisfied when there has been a thorough understanding of the contents of the document, and there is a clear intention to make the disposition of property therein set forth.²

¹ *Clifton v. Murray*, 7 Ga., 564, 50 Am. Dec., 411 (1849); *Hemphill v. Hemphill*, 13 N. C., 291, 21 Am. Dec., 331 (1830); *Martin v. Mitchell*, 28 Ga., 382 (1859); *Wampler v. Wampler*, 9 Md., 540 (1856); *In re Arneson's Will*, 128 Wis., 112, 107 N. W., 1 (1906); *Goldsmith v. Gates*, 205 Ala., 632, 88 So., 861 (1921); *In re Will of Margaret Mealy*, 11 Phila. (Penna.), 161, 33 Leg. Int., 440 (1876). The law is satisfied with a will signed by proxy if the testator has a certain person affix his signature, he understanding that his desires are being carried out—the witnesses present being under the same rules as if the testator were in possession of sight. *Welch v. Kirby*, 166 C. C. A., 527, 255 Fed., 451, 9 A. L. R., 1409 (1918). The expression in the statutes governing wills, "in the presence of the testator," is not to be taken literally as meaning within the vision of the testator; it is sufficient if the will is signed in the presence of witnesses in the same room and within a few feet of the testator, he knowing by the sense of hearing what was transpiring. *In re Allred's Will*, 170 N. C., 153, 86 S. E., 1047, Ann. Cas. 1916D, 788, L. R. A., 1916C, 946 (1915).

² The will of a blind man is valid if he understands the contents when read over to him. *Harleston v. Corbett*, 12 Rich. (S. C.), 604 (1860). A blind testator is not presumed ignorant of the contents of a duly executed will. *Re Bakke*, 160 Minn., 56, 199 N. W., 438, 37 A. L. R., 50 (1924). See also *Hardin v. Hays*, 9 Pa., 163 (1848); *Lewis v. Lewis*, 6 Serg. & R. (Pa.), 496 (1821); *In re Pickett's Will*, 49 Ore., 127, 89 Pac., 377 (1907); *Hess's Appeal*, 43 Pa., 73, 82 Am. Dec., 551 (1862); *Harrison v. Rowan*, 3 Wash. C. C., 580 (1820); *Day v. Day*, 3 N. J. Eq., 549 (1831); *Riggs v. Riggs*, 135 Mass., 238, 46 Am. Rep., 464 (1883); *Calkins v. Calkins*, 216 Ill., 458, 75 N. E., 182 (1905); *Collis v. Walker*, 272 Mass., 46, 172 N. E., 228 (1930); *Dabbs v. Richardson*, 137 Miss., 789, 102 So., 769 (1925); *Weir v. Fitzgerald*, 2 Bradf. (N. Y.), 42 (1851); *State v. Martin*, 2 La. Ann., 667 (1867); *Davis v. Rogers*, 6 Del., 44 (1855); *Wilson v. Mitchell*, 101 Pa., 495 (1882); *Napfle's Estate (Appeal of Sharp)*, 134 Pa., 492, 19 Atl., 679 (1890); *Sehr v. Lindeman*, 153 Mo., 276, 54 S. W., 537 (1899). On the other hand, where a blind man orders a will to be destroyed and believes that this has been done, though such is not actually the case, a revocation or cancellation cannot be deemed to have been effected within the statute. *Boyd v. Cook*, 30 Va., 33 (1831). Where a testator who was very old and nearly blind called for his will, but was given an old letter, which, believing it to be his will, he destroyed, a revocation was not regarded as having taken place. *Pryor v. Coggin*, 17 Ga., 444 (1855). Where a blind person directed that a

DECISIONS RELATING TO CONTRACTS

Akin to the rules laid down with respect to the making of wills by the blind are those applying to the making of their contracts generally. The fact that a man is blind does not, in the absence of fraud, affect the validity of his legal obligations.¹ At the same time a blind man may not be bound by a legal instrument when he is imposed upon, or his lack of sight taken advantage of, in the making of him a party to it.²

DECISIONS RELATING TO INJURIES ON OBSTRUCTED OR DEFECTIVE PUBLIC WAYS

The matter of injuries happening to blind persons which would not have occurred but for their blindness belongs in large measure to the law of negligence, especially as regards contributory negligence on the part of the plaintiff in a suit for damages. In the cases which have been decided upon the subject, the opinions of the courts seem to be divided. Some lean to the view that no recovery can be had by a blind person unless there has been gross negligence on the part of the defendant. By them extreme care and diligence are expected of the blind when going about. Some courts, and perhaps the larger number, on the other hand, will not take too strong a stand against the blind man, especially if the accident were due primarily to the fault of the defendant, even though a person in the full possession of the sense of sight would have escaped injury. The blindness of the blind is not an excuse for the negligence of others. Very often the matter is regarded as a question of fact for the jury, it having to determine to what extent the blind person is chargeable with contributory negligence, or is free from fault, and being governed by consideration of all the attendant circumstances.

The decisions found have mainly to do with four forms of accidents, namely, those occurring on obstructed or defective public thorough-

will be thrown into the fire, but another paper was so disposed of, there was no real revocation. *Kent v. Mahaffey*, 10 Ohio, 204 (1859). See also *In re Liddington's Will*, 51 Hun, 638, 4 N. Y. Supp., 646 (1889). See, in addition, G. E. Gardner, "Law of Wills," 1903, p. 91; J. R. Rood, "Treatise on Law of Wills," 1926, §§ 114, 174, 190, 276, 305, 344; W. P. Borland, "Law of Wills and Administration of Estates," ed. 1915, pp. 56, 59, 119, 239; James Schouler, "Law of Wills, Executors, and Administrators," 1915, pp. 107, 384, 425; W. H. Page, "Law of Wills," 1926, §§ 42, 164, 200, 340, 418.

¹ *Guerra v. Rocco*, 181 Ill. App., 528 (1913). The blindness of a debtor does not affect the creditor's right to payment. *Sanborn v. Cole*, 63 Vt., 590, 22 Atl., 716, 14 L. R. A., 208 (1891). See also L. F. Hammon, "Principles of Law of Contracts," 1902, p. 99; W. H. Page, "Law of Contracts," 1902, § 1646.

² Where a note is falsely or fraudulently read to a blind man, and he signs it in good faith, he may defend on the ground of fraud, and is not chargeable with negligence on account of his blindness. *Atkinson v. Kelley* (Mo. App.), 214 S. W., 276 (1919).

fares, those occurring at railway crossings, those occurring on railway cars or trains, and those occurring in collision with automobiles or other vehicles on public ways. In cases in connection with the use of highways and sidewalks upon which blind persons have proceeded, and upon which, because of some defect therein apparent to one with sight, they have met with disaster, the predominant view is that they have a full right to be upon such places, and that if these happen to be in a bad condition, the blame rests with the public authorities, or with those who are directly responsible. A blind man may thus, not because of alleged contributory negligence on his part, lose his right of recovery for the injuries which he has sustained. This attitude may even extend to cases where if the blind man had himself exercised sufficient care, he would not have incurred the mishap. The courts consider that one has the right to assume that the public thoroughfares of his neighborhood are safe for travel and may act upon that assumption. In other words, in point of law it is not negligence on the part of a blind person to traverse public ways without escort. In the language of one decision, "it cannot be laid down as a universal rule that it is negligence for a blind man to walk the streets . . . unattended."¹ By another Court it is declared that "sidewalks are made for use of the lame, the halt, and the blind, as well as for persons in the full possession of their faculties."² As stated in a third decision:

It cannot be held as a matter of law that the plaintiff, because of his blindness, was, in going upon the streets and walks, deprived of the protection afforded to other citizens. Having no knowledge to the contrary, he had the right to assume that the streets and walks were in safe condition for the passage of pedestrians.³

In a fourth case the rule is set forth as follows:

It is well settled that one who is blind or whose eyesight is so impaired is not thereby deprived of the right to use the public highways. . . . He was only bound in so doing to exercise the care and caution that a person of ordinary prudence who is blind or whose eyesight is so impaired, would have exercised under the circumstances; and the principle is the same as that applicable to the use of a street by a person with unimpaired eyesight, but whose eyesight is of no avail owing to darkness . . . and such a person in the exercise of his right to use the public highways is justified in assum-

¹ *Smith v. Wildes*, 143 Mass., 556, 10 N. E., 446 (1887) (fall of blind man into trapdoor on sidewalk of much frequented street, no guard being provided, and no warning given).

² *Yeager v. Town of Spirit Lake*, 115 Iowa, 593, 88 N. W., 1095 (1902) (fall of blind woman on sidewalk, the only one in her course, which was old and decayed). See also *Balcom v. City of Independence*, 178 Iowa, 685, 160 N. W., 305, 14 N. C. C. A., 391, L. R. A., 1917C, 120 (1916) (fall of blind person into an unguarded ditch of a city water main).

³ *Carter v. City of Nunda*, 55 App. D., 501, 66 N. Y. Supp., 1059 (1900) (blind man accustomed to going about alone injured by plank in sidewalk tripping up).

ing, if he does not possess the knowledge to the contrary, that the public streets are reasonably safe for travel.¹

An analogous rule exists for the protection of customers or patrons of business houses.²

In a minority of decisions a more stringent rule is adopted, and a blind person may be required to show affirmatively that he has exercised due care, and that the accident complained of was in no wise owing to his own want thereof.³

¹ *Shields v. Consolidated Gas Co.*, 183 N. Y. Supp., 240, 193 App. D., 86 (1920) (fall of person with impaired eyesight into unprotected gas trench in crosswalk in daytime). See also *Glidden v. Town of Reading*, 38 Vt., 52, 88 Am. Dec., 639 (1865) (where a blind man traveling along a road on a dark night and unable to be seen, heard a team coming at some distance and in an unknown direction, and, being ignorant of the condition of the highway, but supposing it to be safe for his movements, left it because of the danger which he feared, and suffered injuries in consequence); *Foy v. City of Winston*, 126 N. C., 381, 35 S. E., 609 (1900) (where a ditch was left open in the street by workman, and a red light put by it, and later a blind man stumbled into it, who had proceeded unattended, and had failed to use his staff); *Sleeper v. Sandown*, 52 N. H., 244 (1872) (where a blind man accustomed to walking about alone stepped off the side of a bridge, with which he was familiar, and the railing of which was lately missing, it being for the jury to decide whether a guide should have been employed); *Keith v. Worcester & B. V. St. Ry. Co.*, 196 Mass., 478, 82 N. E., 680, 14 L. R. A., 648 (1907) (stumbling over pile of planks not usually so placed, by woman with very defective sight while hurrying to take car); *Hestand v. Hamlin*, 218 Mo. App., 122, 262 S. W., 396 (1924) (fall of blind man into sewer ditch, knowing that excavations therefor had been going on, but not knowing just where); *Masterson v. Lennon*, 115 Wash., 305, 197 Pac., 38, 17 N. C. C. A., 1057 (1921) (fall of blind man into excavation near street crossing, being accustomed to pass that way); *Neff v. Town of Wellesley*, 148 Mass., 487, 20 N. E., 111, 2 L. R. A., 500 (1889); *Ham v. City of Lewiston*, 94 Me., 265, 47 Atl., 548 (1900); *Wedderburn v. City of Detroit*, 144 Mich., 684, 108 N. W., 102 (1906); *Peach v. City of Utica*, 10 Hun (N. Y.), 477 (1877); *Davenport v. Ruckman*, 37 N. Y., 568 (1868); *Hill v. City of Glenwood*, 124 Iowa, 479, 100 N. W., 522 (1904). See, in addition, *Corpus Juris*, 1928, xlv., p. 996.

² Where a customer in a store, with defective sight and hearing, fell into an open trap-door, the storekeeper having spoken in an ordinary tone of the danger, there was held to be insufficient warning, and no contributory negligence. *Brown v. Stevens*, 136 Mich., 311, 99 N. W., 12 (1904). See also *McCrum v. Weil & Co.*, 125 Mich., 297, 84 N. W., 282 (1900); *Gohn v. Butte Hotel Co.*, 88 Mont., 599, 295 Pac., 262 (1931) (fall of blind guest into elevator shaft).

³ *Stewart v. City of Nashville*, 96 Tenn., 50, 33 S. W., 613 (1896) (fall of blind man into open water drain, of the existence of which he had full knowledge); *City of Franklin v. Harter*, 127 Ind., 446, 26 N. E., 882 (1890) (fall of person with defective sight into cellar lying near defective sidewalk, only one opening having been left exposed, which could have been seen by a person with sight); *Edwards v. City of Raleigh*, 150 N. C., 276, 63 S. E., 1040 (1909) (fall of man almost blind upon stairway leading to basement alongside sidewalk, there being a railing on one side, and there being ample room on the sidewalk on which to walk); *Garbanati v. City of Durango*, 30 Col., 358, 70 Pac., 686 (1902) (fall of man with defective sight off edge of sidewalk, protecting railing of which was missing, he being conscious of danger, and feeling his way about); *Karl v. Juniata County*, 206 Pa., 633, 56 Atl., 78 (1903) (driving of man with defective sight upon pile of planks on county bridge carefully placed at one side); *Winn v. City of Lowell*, 83 Mass., 177 (1861) (fall of person with poor sight from defective plank over space for passage of water); *Gilbert v. City of Boston*, 139 Mass., 313, 31 N. E., 234 (1885); *Provinsal v. Peterson*, 141 Minn., 122, 169 N. W., 481 (1918); *Warruna v. Dick*, 261 Pa., 602, 104 Atl., 749 (1918); *Town of Salem v. Goller*, 76 Ind., 291 (1881). Where a person almost blind engaged in selling newspapers turned by mistake from the street into a private entrance, and fell into an open hatchway, the owners were held not to be guilty of negligence, as they were not bound to provide for the unintended use of their property, and the injured person was not really an invitee. *Oyshterbank v. Gardner*, 49 N. Y. Super., 263 (1883).

DECISIONS RELATING TO INJURIES AT RAILWAY CROSSINGS

In the matter of accidents occurring to the blind at places known to be dangerous, particularly at railway crossings or on railway tracks, the prevailing doctrine is to hold them to strict accountability for what may befall them in frequenting such places. If they elect to incur the risks, and are lax in displaying all the caution which the circumstances demand, they are left to the consequences of their acts, and an effectual bar to recovery is usually set up. No special solicitude is required of those in charge of the operation of trains or cars; and no blame can attach to them unless there happens to be knowledge of the infirmity of the injured party.¹

In judicial decisions where a view more lenient to the blind is taken, a distinction is drawn between cases where the contributory negligence on their part is the proximate cause of the accident and cases in which such negligence may be regarded as the remote cause. In the latter instance the blind man is looked upon as not being principally at fault, and hence is entitled to recover. Only ordinary caution is expected of him.²

DECISIONS RELATING TO INJURIES ON RAILWAY TRAINS

In respect to the treatment to be accorded to blind persons when they are accepted for transportation by common carriers, a view

¹ Where a blind man was injured at a railroad crossing, the intersection of several lines, it was held that, though he had the right to frequent railways and other public crossings, he was bound to exercise all the diligence that the case required, and that when the danger was very great, he was grossly negligent and assumed all risks. *Florida C. & P. R. Co. v. Williams*, 37 Fla., 406, 20 So., 558 (1896). Where a blind man changing from one street car to another was given a transfer, and was told by the conductor that the road was clear, and, no particular effort being made by himself to listen, was struck by a car, his conduct was held to amount to contributory negligence, despite the original negligence of the conductor. *Wilson v. Detroit United Ry.*, 167 Mich., 107, 132 N. W., 762 (1911). A person with seriously impaired vision who on alighting from one train is struck by another on a parallel track, which could have been heard at a great distance, is chargeable with contributory negligence. *Gonzales v. New York & H. R. Co.*, 33 N. Y. Super., 57 (1871). (See also 29 N. Y. Super., 93, 38 N. Y., 440, 98 Am. Dec., 58.) A blind man crossing a street, who stops when he hears some one calling, and is struck by a passing car, cannot recover. *Webb v. Chicago City Ry. Co.*, 83 Ill. App., 565 (1899). See also *Candee v. Kansas City & I. R. T. Ry. Co.*, 130 Mo., 142, 31 S. W., 1029 (1895) (person with defective sight and hearing walking on railroad track, and struck by train, which had sounded its whistle and bell, but was unable to stop in time, there being no knowledge of the person's condition); *Fusili v. Missouri Pacific Ry. Co.*, 45 Mo. App., 535 (1891); *Marks' Admr. v. Petersburg R. Co.*, 88 Va., 1, 15 Va. L. R., 501, 13 S. E., 299 (1891); *Maloy v. Wabash, St. L. & P. Ry. Co.*, 84 Mo., 271 (1884); *Ransier v. Minneapolis & St. Louis Ry. Co.*, 30 Minn., 215, 14 N. W., 883 (1883); *Irvin v. Brooklyn Heights R. Co.*, 59 App. D., 95, 69 N. Y. Supp., 80 (1901); *Southern Ry. Co. v. Neal*, 164 Ky., 121, 175 S. W., 14 (1915); *McKinney v. Chicago & N. W. Ry. Co.*, 87 Wis., 282, 58 N. W., 386 (1894).

² *Johnson v. Gulf, C. & S. F. Ry. Co.*, 2 Tex. Civ. App., 139, 21 S. W., 274 (1893) (blind man thrown from wagon on approach of hand car, which failed to have proper brakes); *Rosenthal v. Chicago & A. R. Co.*, 255 Ill., 552, 99 N. E., 672 (1912) (person with poor eyesight struck by backing locomotive, which failed to ring bell or to whistle); *Lortz v. New York Central & H. R. R. Co.*, 7 App. D., 515, 40 N. Y. Supp., 253 (1896).

generally favorable to them is adopted. More than ordinary care and attention must be extended to such passengers, including due assistance to them while boarding or alighting from trains, when their condition has been made known—in fact, all the care and attention that the circumstances of the case call for.¹ So strongly is this principle held that the question has arisen whether carriers are bound to receive blind persons as passengers if without escort. Their traveling is believed to be attended with such risks that a railway company may be considered to be justified in refusing to sell them transportation unless in accompaniment of a person with sight, especially when a change of cars has to be made during the journey.² It may be left for the jury to decide whether or not, in the circumstances, and particularly in view of previous traveling on their part, they may be regarded as competent to make the trip alone, in which event it is incumbent upon them to produce evidence to such effect.³

¹ A blind passenger, who after having told a porter of his blindness and asked assistance, fell from the end of a car, had the right to believe that the directions given him were correct, and that his movements would be guided. *Denver & R. G. Ry. Co. v. Berry*, 47 Col., 584, 108 Pac., 172, 27 L. R. A., 761 (1910). Where a railway company was aware that a prospective passenger was blind, but received him notwithstanding, it was obligated to consider the fact of his blindness in giving him sufficient time to board a train. *Indianapolis Southern Ry. Co. v. Wall*, 54 Ind. App., 43, 101 N. E., 680, 4 N. C. C. A., 532 (1913). Where a brakeman who had been informed of the condition of a blind passenger left him on the platform, instead of leading him to a seat, and he was thrown to the ground when the train started, the railway was held to be responsible. *Hanks v. Chicago & A. Ry. Co.*, 60 Mo. App., 274 (1895). Where a conductor who had promised to assist a blind passenger to alight, failed to do so, and a fellow passenger who offered aid was compelled to go a roundabout way to an exit, by which the blind person fell and sustained injury, the fellow passenger omitting to give warning of the danger, the railway was held responsible. *Georgia Railroad & Banking Co. v. Rives*, 137 Ga., 376, 73 S. E., 645, 38 L. R. A. (n. s.), 564, 2 N. C. C. A., 174 (1912). Where a carrier was notified that a passenger was almost blind, but failed to tell her when her destination was reached, and allowed her to attempt to alight without assistance, it was held to be a question for the jury whether the passenger was guilty of contributory negligence. *Layne v. Chicago & A. R. Co.*, 175 Mo. App., 34, 157 S. W., 850 (1913). A blind person killed as the result of a railway collision is not to be regarded as guilty of contributory negligence, since the fact of his blindness was not the proximate cause of the accident, even though the possession of sight would have enabled him to escape. *St. Louis, I. M. & S. Ry. Co. v. Maddry*, 57 Ark., 306, 21 S. W., 472 (1893). See also *Southern Ry. Co. v. Hobbs*, 118 Ga., 227, 45 S. E., 23, 63 L. R. A., 68, 14 Am. Neg. Rep., 523 (1903); *Vivian v. San Antonio, U. & G. R.* (Tex. C. C. A.), 196 S. W., 267 (1917).

² *Illinois Central R. Co. v. Allen*, 28 Ky. Law Rep., 108, 89 S. W., 150 (1905).

³ The refusal of a railway to receive a blind man as a passenger because of his blindness is a wrongful act unless there is proof *aliter* that he is unable to travel alone. *Zackery v. Mobile & O. Ry. Co.*, 74 Miss., 520, 21 So., 246, 60 Am. St. Rep., 529, 36 L. R. A., 546, 6 Am. & Eng. Ry. Cas., 267 (1897). See also 75 Miss., 746, 23 So., 434, 65 Am. St. Rep., 617, 41 L. R. A., 385 (1898). The reasoning of the Court has been thus given: "Primarily the affliction of blindness unfits every person for travel by railway, if unaccompanied. No blind person without previous experience could possibly accommodate himself to the many exigencies incident to travel by railroad, or guard himself against peril in boarding or alighting from trains, changing from one train to another, or threading his way in safety across the railway tracks at crowded stations. Hence the rule which provides that every blind person is presumed to be, in the absence of proof of experience, unfit to travel alone, is not unreasonable. Nor . . . [is] such a regulation a hardship upon the persons afflicted with blindness or other disabling physical infirmity. It is rather a safeguard thrown around them for their own protection. Therefore, when a blind person appears to purchase a

DECISIONS RELATING TO INJURIES IN COLLISIONS WITH VEHICLES
ON PUBLIC WAYS

Action may lie against persons, especially those in automobiles or other vehicles, who use public ways in such negligent manner as to cause injury to the blind.¹ In one decision the Court has stated the matter as follows with respect to an injury to a blind man by an automobile when crossing the street:

No person or class of persons has an exclusive right to the use of the streets. . . . The blind and the halt may use the streets without being guilty of negligence if, in doing so, they exercise that degree of caution which an ordinarily prudent man similarly afflicted would exercise under the same circumstances.²

DECISIONS RELATING TO POSSIBLE CIVIL DISABILITIES IN
CONSEQUENCE OF BLINDNESS

A special class of decisions relates to the extent to which the rights or duties or responsibilities appertaining to citizenship are affected ticket, being himself unknown to the agent, and that ticket is refused, the carrier is not liable by this act to be mulcted in damages, but . . . if the agent knows of his personal knowledge of the competency to travel of the person, or if the fact of such ability is made known to him in any manner, and he still persists wantonly and arbitrarily to sell the person desiring passage a ticket, the carrier may be made to respond in damages for his offensive act. And it is the duty of the agent of the carrier to listen to the explanation of the person desiring to purchase a ticket, and judge of his competency in the light of the facts then made known to him, and the question of the reasonableness or unreasonableness of his refusal is one of fact to be submitted to the jury." *Illinois Central Ry. Co. v. Smith*, 85 Miss., 349, 37 So., 643, 107 Am. St. Rep., 293, 70 L. R. A., 642 (1907). On the matter of accidents to the blind in connection with railways, see also T. G. Shearman and A. A. Redfield, "Treatise on Law of Negligence," ed. 1913, §§ 88, 375, 481; Robert Hutchinson, "Treatise on Law of Carriers," 1906, §§ 967, 993, 1231; T. J. Michie, "Treatise on Law of Carriers," 1915, p. 2121; Norman Fetter, "Treatise on Law of Carriers of Passengers," 1897, pp. 464, 635; D. C. Moore, "Treatise on Law of Carriers," 1917, pp. 1140, 1250, 1594; A. J. Nellis, "Law of Street Railways," 1911, § 430; H. J. Booth, "Treatise on Law of Street Railways," ed. 1911, § 386; Am. & Eng. Enc. of Law, 1898, vii., p. 442; Cyclopaedia of Law, 1908, xxxix., p. 533; *Corpus Juris*, 1917, x., p. 646.

¹ A person almost blind walking on a public highway and struck by an automobile which was on the wrong side of the road and was going at a high rate of speed, and which he attempted to avoid by jumping, may be held only to the exercise of reasonable care, in view of all the circumstances. *Apperson v. Lazro*, 44 Ind. App., 186, 87 N. E., 97, 88 N. E., 99 (1909). Where a blind man familiar with the streets of a city was crossing one, and was struck by an automobile, which was on the wrong side and was going at a very rapid rate, and which gave no warning, recovery was allowed for the injuries received, as it had been possible to discover that he was blind and had become disconcerted in his movements. *McLoughlin v. Griffin*, 155 Iowa, 302, 135 N. W., 1107 (1912). See also *Hefferon v. Reeves*, 146 Minn., 505, 167 N. W., 423 (1918) (blind person on way from street car to sidewalk struck by automobile); *Robbins v. Springfield St. Ry. Co.*, 165 Mass., 30, 42 N. E., 334 (1895); *Harris v. Uebelhoer*, 75 N. Y., 169 (1878); *Marshall & E. T. Ry. Co. v. Petty*, 107 Tex., 387, 180 S. W., 105 (1915); *Wilson v. Bittner*, 129 Ore., 122, 276 Pac., 268, 64 A. L. R., 132; 29 N. C. C. A., 239 (1928); C. P. Berry, "Law of Automobiles," 1926, § 232; X. O. Huddy, "Law of Automobiles," 1927, § 499.

² *Weinstein v. Wheeler*, 127 Ore., 411, 271 Pac., 733, 62 A. L. R., 574 (1928). Recovery may be had by a man with bad eyesight and also with defective hearing, when struck by an automobile which was driven across a sidewalk at excessive speed, although everything possible was done by way of warning, including the blowing of the horn, it being the view of the court that the pedestrian, despite his condition, had the right to be where he was. *Crawley v. Jermain*, 218 Ill. App., 51 (1920).

by the existence of blindness or impaired sight.¹ The courts here seem quite disposed to protect the rights of the blind man in all particulars, and to extend to him all the consideration possible in the discharge of his obligations as a citizen, unless manifestly there must be some modification or qualification or abrogation of these things in view of the exigencies of the situation.²

The question has occasionally arisen in connection with the right of suffrage or with jury service. Where the law expressly confers upon the blind man the right to vote, it will not permit this right to be interfered with.³

Other decisions have reference to the extent to which public officials may be handicapped in the discharge of their duties by the absence of eyesight or by its impairment. The question may turn upon whether certain acts of such an official are invalid because of the want of sight, the view of the courts seeming to be that such an infirmity need not necessarily disqualify or render one incapable of the proper discharge of his obligations, provided that these duties can be satisfactorily performed notwithstanding. In one case the fact that a county commissioner who aided in the drawing of a grand jury was blind, was held not to render an indictment void, when it appeared that he was otherwise capable of performing his duties.⁴ In a second case it was declared by the court:

Notwithstanding the disadvantages under which a blind man must labor in the position of police judge, it cannot be said that the misfortune wholly disqualifies him from holding the office.

His qualifications, it is added, are really passed upon by the people in their electing him to office.⁵

In a case of a different nature the blind daughter of a deceased person living with her husband, also blind, is held to be entitled, by way of compensation, to death benefits equal to those of a widow—

¹ Criminal offenses against blind persons are usually considered to be of aggravated nature.

² The trained dog of a blind newspaper vendor, which is killed, is regarded as having only the market value of a dog, and no special value. *Young's Bus Line v. Redman* (Tex. Civ. App.), 43 S. W. (2), 266 (1931).

³ A ballot is invalid when a blind man, permitted by law to vote, is compelled upon oath to declare his blindness. *Cole v. Nunnelle*, 140 Ky., 138, 130 S. W., 972 (1910). Where a man has sight so defective that he cannot see the expressions on the face of a witness nor certain of the objects introduced as evidence, he is not competent as a juror. *Rhodes v. State*, 128 Ind., 189, 27 N. E., 866, 25 Am. St. Rep., 429 (1891). Where the defect in sight is not serious, there is no bar to jury service. *State v. Norman*, 135 Iowa, 483, 113 N. W., 340 (1907).

⁴ *Eureka County Bank Habeas Corpus Cases*, 35 Nev., 80, 126 Pac., 655 (1912).

⁵ *State v. Cocking*, 66 Mont., 169, 213 Pac., 594, 28 L. R. A., 772 (1923). See also *State v. Board of Police Commissioners*, 49 N. J. L., 170, 6 Atl., 659 (1886).

such a person being one "who is conclusively presumed to be wholly dependent for support on the deceased employee."¹

OTHER DECISIONS RELATING TO BLIND

Of the remaining judicial decisions relating to the blind, one is in regard to whether a statute providing for the appointment of guardians for certain classes of the population applies equally to the blind, who are not mentioned by name, the opinion being a negative one.²

The final matter calling for judicial attention is as to whether the blind are to be held accountable in law for their misdeeds. In this there is no disinclination to declare that they are fully so; for, says the Court, if it should be admitted that they are not on a parity with the rest of the community in this regard, "the blind would ordinarily be wholly exempt from punishment for the violation of any penal statute."³

The matter of the responsibility of blind persons (or persons with defective sight) for accidents to other persons seems to be governed practically altogether by the circumstances of individual cases. In some cases such a person is held to full responsibility.⁴ In other cases a contrary view is held.⁵

¹ *Gavaghan's Case*, 232 Mass., 212, 122 N. E., 298 (1919). A person alleging himself to be blind, but able to see sufficiently to carry on his business, is not within the exemption of the law regarding the payment of a poll tax. *McCormick v. Jester*, 53 Tex. Civ. App., 396, 115 S. W., 278 (1906).

² *Griffin v. Collins*, 121 Ga., 102, 49 S. E., 827 (1905).

³ In behalf of a blind person under indictment for the illegal selling of intoxicating liquor, it was claimed that he was not on a parity with other witnesses, in not being able to procure evidence as they. *Bishop v. State*, 18 Ga. App., 714, 90 S. E., 369 (1916). The reading to a blind man of defamatory matter in a letter does not constitute libel. *Lane v. Schilling*, 130 Ore., 119, 279 Pac., 267, 65 A. L. R., 1042 (1929).

⁴ *Campbell v. Walker*, 24 Del., 580, 76 Atl., 475 (1910) (automobile driven by person with defective sight); *Irwin v. Brooklyn Heights R. Co.*, 59 App. D., 95, 69 N. Y. Supp., 80 (1901) (street railway corporation held liable for accident, motorman having defective sight).

⁵ *Engelhardt v. Delaware, L. & W. R. Co.*, 78 Hun, 588, 29 N. Y. Supp., 425 (1894) (engineer with defective sight); *Keys v. Penna. R. Co.*, 1 Sadler (Pa.), 316, 3 Atl., 15 (1886); *Texas & P. R. Co. v. Harrington*, 62 Tex., 597 (1884); *Louisville & N. R. Co. v. Lile*, 154 Ala., 556, 45 So., 699 (1908); *Maybee v. Maybee* (Utah), 11 Pac. (2), 973, 31 N. C. C. A., 307 (1932).

CHAPTER XIX

POPULAR CONCEPTIONS REGARDING BLIND

GENERAL SENTIMENTAL ATTITUDES TOWARD BLIND

The position of the blind in society is further to be indicated by the conceptions which are held regarding them by their fellow men, or by the attitude entertained towards them by the community in general.¹ Respecting the blind many erroneous conceptions, or misconceptions, are found to be cherished, which show little sign of abatement with the course of time. They are probably due primarily to the impression that in the loss of the sense of vision such a transcending change has been effected in one's composition and temperament as to remove one from the currents of ordinary life and ways. As few are called upon to associate intimately with the blind, there is often little chance of the realization of the true situation.

The sentiment instantly excited at the sight of the blind is one of overwhelming pity for their condition. On nearly every hand manifestations of this compassion are to be found, awakened by a state that suggests helplessness, and invites help. When occasion arises for its practical expression in some form of assistance, rarely is reluctance or hesitation displayed, but rather abundant willingness, and even eagerness. Though the method adopted to hold out a hand to the blind is not in every case, especially in such as involves the extension of material relief, a wisely chosen one, this seldom results from a want of concern in them or of a genuine desire to aid or serve them. Generous as are the motives of the public in respect to the blind, however, and creditable as are the acts of those who have had a part in succoring them, there does not always issue a complete understanding of the situation of the blind, nor is there prevented the rise of certain misapprehensions regarding them.

Because of their condition, and in part also from the compassion that has been occasioned for it, the blind have in the minds of many been trailed in clouds of imagination. They have especially lent themselves to the fancies of the story-teller, ample instances of which are found in works of fiction and of poetry.² The treatment which they

¹ Matters of a purely psychological concern affecting the blind are not within the purview of our study.

² To readers both of classic and of popular literature not a few instances will occur of blind characters, usually of a kind to stir our sympathies over their misfortunes, to awaken

have received here has but operated to color the views of the public generally. Oftentimes the blind are deemed to dwell to a considerable extent in a world away from and beyond that inhabited by ordinary mortals. They are held to be of a less gross and material element than are other persons, and to possess a peculiarly spiritual temperament. They are supposed to be able to respond to certain inner promptings to which others may not, and to rise to unusual esthetic heights. They are further frequently thought of as being of an exceedingly docile or tractable disposition, and as being of singularly pure and innocent minds.

At times the blind are regarded as without a sense of humor, or even as unable to laugh. Not infrequently, however, on the other hand, they are believed to be given to abnormal ways of thinking or behavior. Now and then to certain blind characters is attached a peculiar viciousness or repulsion.

The blind sometimes are made to feel in a harsh manner their misfortune. Not infrequently, when in the company of others, they are subjected to a strange thoughtlessness in being spoken of as though they were not present, a situation seemingly due in part to the supposition that they are deprived of the power of hearing.¹ Occasionally they are

our admiration for their long fight against overwhelming odds, or to indicate to us to what heights a human spirit may rise despite physical limitations. In Shakespeare's great play of "King Lear," it is the king, poor and forsaken, who furnishes the renowned example of the sorrows of the blind. In Lytton's "The Last Days of Pompeii" it is the noble-minded Nydia who acts as guide from out the stricken city. In Brontë's "Jane Eyre" the hero Rochester becomes a better man for the loss of his sight. Kipling's "The Light That Failed" is the story of a man whose vision has departed. In George Eliot's "Romola" the father of the heroine is without sight. Other blind characters are Romney in Elizabeth Barrett Browning's "Aurora Leigh"; Bertha Plummer in Dickens' "Cricket on the Hearth"; Stagg in Dickens' "Barnaby Rudge"; Wandering Willie in Scott's "Redgauntlet"; Blind Alice in Scott's "The Bride of Lammermoor"; Blind Bessie McClure in Scott's "Old Mortality"; Amyas Leigh in Kingsley's "Westward Ho"; Pew in Stevenson's "Treasure Island"; Muriel in Mrs. Mulock's "John Halifax"; Inez in Crawford's "The Palace of the King"; Naomi in Hall Caine's "The Scapegoat"; Wolf Larsen in Jack London's "Seawolf"—besides many other scattered characters. On the blind in fiction, see Proceedings of American Association of Instructors of Blind, 1908, p. 7; *Outlook for Blind*, vi., 1912, p. 68; *Journal of Applied Psychology*, xiv., 1930, p. 269. See also Perkins Institution for Blind, Special Reference Library of Books Relating to Blind, 1907; Supplement, 1916; 1930.

¹ Not seldom in the public mind the blind and the deaf are thought of together, and the problems of one class believed to be those of the other. As a matter of fact, there is but one point of resemblance between the two: both are "defective" in that they are each deprived of a most important physical sense. The gulf that really separates the blind from the deaf is far deeper than that which lies between either of the two classes and the normal population. To those intimately acquainted with both the contrast is very marked. Without close reference to psychological factors, but with consideration only of the relation of each to the community, it may be said that the deaf are better able to take care of themselves in the world, and that the blind respond more readily to what is of less concrete nature, or to what calls forth the intellectual or esthetic faculties. In other words, the deaf approach the general population more along economic lines, and the blind more along mental and social lines. The state of the blind and of the deaf has been thus described, on the supposition that each were to form a colony: "The deaf would have less poetry, but more bread

treated as though they were physically infirm or decrepit, or even as though they were deficient mentally. Not seldom they are liable to attentions that are ill-considered or misdirected, or that emphasize too strongly their infirmity. They may at times have to endure a more or less offensive interference with their own affairs under the guise of helpfulness.

MISTAKEN EVALUATIONS OF ACHIEVEMENTS

To certain achievements of the blind there is sometimes ascribed an excessive importance, these occasionally being looked upon as evidence of a mysterious endowment, or even of a "sixth sense." However remarkable such things may appear to be on the part of persons without sight, it seems often to be forgotten that some are after all of a really simple nature and possible of accomplishment without the aid of vision, and that the execution of truly difficult feats lies only with the gifted few. As a general thing, it may be stated that on the loss of sight the remaining senses, especially that of hearing, become very quick and discriminating—or perhaps rather that a keenness is developed in the interpretation of the information furnished by these senses. With respect to the sense of hearing, for instance, it is merely true that the blind listen more intently, and thus obtain auditory perceptions of an enlarged range. In other words, the remaining senses of the blind receive no added gifts, and take on no new faculties. What they have is simply an acquired ability to use with the utmost effect what is left to them. It also comes about that the blind learn to employ certain mental powers, particularly that of memory, in ways that, with the existence of vision, are rarely called for, or even thought of. All this is but a natural result of the condition of the blind, and is after all one to be expected. Yet it is to such things that are to be attributed most of the acts or performances of the sightless regarded as marvelous. The outcome of the entire situation is twofold, and unfortunate in one respect as in the other. Capabilities which might reasonably be imputed to the blind either are denied them or are looked upon with the greatest wonder; and powers are referred to all which few at the most possess. In consequence of all this, the practical, every-day condition of the blind is misunderstood, being either underrated or overrated: it is lost sight of in the mass of misconceptions which have been allowed to grow up regarding them.¹

and butter; fewer artists, but a greater number of useful artisans." Proceedings of National Education Association, 1903, p. 990.

¹ A more or less popular belief is that practically all the blind are musically inclined, and that no small number are musical geniuses. Not infrequently abnormal powers of memory are ascribed to the blind as a class. An opinion rather widely entertained is that

POSSIBLE MISLEADING CLASSIFICATIONS

A frequent popular query as to the blind relates to the extent to which they are to be regarded as "unhappy," because of the absence of the sense of sight.¹ In the main the matter varies with the temperament of the individual blind, and with particular circumstances.² We may perhaps state that, speaking for the larger number of them, they do not spend themselves in bemoaning their fate, or give themselves to constant dwelling upon their affliction. Many appear undismayed, and have an abundance of cheerfulness. The "adjustment" of the blind to their condition helps much to save their lot from some of its bitterest pangs.³

Another possible source of misconception lies in the classification often assigned to the blind in scientific terminology, and one often adopted, if in other terms, in more common parlance, namely, that the blind are to be set down as one of the "defective" classes.⁴ So far as this analysis relates to a physical state alone, it is altogether correct, for the loss of sight is obviously and unquestionably a "defect," and of a most serious character.⁵ When, however, such phrases are used loosely, and may be made to refer to or connote a mental condition as well, not only is there a misapplication of terms, but, in part from their inclusion with certain other groups, a real and measurable injury may be done to the blind as a class.

the blind are able to recognize color by the sense of touch. Often the ability of the blind to go about unattended in the country or in the city is set down as more remarkable than it really is. Not seldom is it taken for granted that the blind are unable to feed or clothe themselves. At times it is even feared that the giving of something to do to the blind, especially in work in or about the home, will be an act of harshness or cruelty.

¹ See E. T. Devine, "Misery and Its Causes," 1909, p. 45; Robert Hunter, "Poverty," 1904, pp. 76, 83, 96; Maurice Parmelee, "Poverty and Social Progress," 1917, p. 298.

² "The tragedy of blindness is not inability to see; it is the dread of dependence; of poverty and want and the pauper's grave. Childhood looks not far ahead; but young men and women, however cheerful they may generally appear, too often yield to periods of depression. It is but natural that the outlook should be dark and foreboding. The wonder is that this is so often and so readily relieved. Blindness borrows trouble; its victims are overcome by self-pity. Too frequently there follows a sinking of the fires of life, a flagging of energy resulting in idleness, morbidity, and ennui. Any people so oppressed in mind tend to deteriorate in every way—even morally." E. E. Allen, "Reconstruction of Perkins Institution Pressing Need," 1907, p. 7.

³ Says a blind author: "Blindness changes and utterly reorganizes the entire mental life of the individual. . . . Almost literally the blind person's world is peopled with voices." T. D. Cutsworth, "The Blind in School and Society," 1933, pp. 2, 311.

⁴ In the Index of Economic Material in Documents of States of the United States of the Carnegie Foundation the blind and the deaf are classed as "defectives," along with the feeble-minded and the consumptives. See also Proceedings of National Education Association, 1901, p. 876. In directories of social welfare organizations, in year books and catalogues of various kinds, in legal literature, etc., the blind are often given a classification under "charities" or a similar appellation.

⁵ The blind have been referred to as "socially inadequate." See *American Journal of Sociology*, xxvii., 1921, p. 54.

GENERAL PARALLELS BETWEEN BLIND AND SEEING

A common misapprehension with respect to the blind on the part of the public is the holding of them as though they were all composed of the same essential nature, or of one of them as the representative of a class. The fact fails to be recognized that the blind differ among themselves fully as much as is the case among normal persons.¹ Judgment towards the blind has to be rendered according to the individuals among them, in no less a degree then according to the individuals constituting the general population.²

Finally, with regard to popular conceptions concerning the blind, it may be remarked that it is seldom realized how distinctly "human" the blind are after all. Whatever peculiarities the blind may be discovered to possess are little more than the result of the reaction of their condition upon their consciousness.³ They have few characteristics, aside from those directly traceable to the absence of sight, which other persons are without.⁴ Whatever foibles and whatever virtues are found among mankind or exist in human nature, these are shared in by the blind in not far from equal measure.

¹ "There are the gifted, self-sufficient, independent blind, those whose pecuniary circumstances place them beyond the need of other assistance; the sturdy plodder who earns a fair living wage by dint of hard work, and is well content therewith; the discontented, disagreeable grumbler, who does nothing himself, and does not want any one else to work either; and the incompetent, helpless, dependent. The whole gamut of human life is found among the sightless people." *Outlook for Blind*, vii., 1913, p. 8. See also *Voices from Darkland*, March, 1916. "There are two classes of blind adults: those to whom the loss of sight is the only hardship, and those in whom the causes which produced blindness have produced other physical disabilities. . . . Blindness with a strong mind and body is one thing; blindness plus shattered nerves, a weakened body, and serious physical ailments is quite another matter." *Outlook for Blind*, vii., 1913, p. 61. "In spite of its frequent use in speech and in writing, the phrase 'the blind' cannot be used in any generic sense; there is no such concept as 'the blind.' Persons without sight differ, precisely as those who see, in capabilities, in tastes, in character—in short, in all matters that go to make personality. Some have keen intellects, some are dull and almost unteachable; some have a good deal of pride about their personal appearance, others are wholly devoid of an appreciation of its importance; some have strong, sterling characters, others are weak, easily led, and wholly undependable." W. C. Posey, "Hygiene of Eye," 1918, p. 323 (O. H. Burritt). The pupils in a school for the blind are described as "a heterogeneous group of boys and girls, whose vision ranges from one-tenth of normal to total blindness; whose ages of acquiring blindness vary between babyhood and young manhood and womanhood; and among whom are representatives of all degrees of intelligence, from the feeble-minded to the intellectually brilliant." Report of Pennsylvania Institution, 1920, p. 20.

² Possibly, if anything, differences among the blind are accentuated by differences in age at loss of sight, individual temperament, mental status, physical health, home environment, social heredity, and other considerations.

³ For a plaint of the blind that they are better qualified to judge of their needs than others, see *Voices from Darkland*, June, 1912.

⁴ "Intellectually there is no difference between the good mind which looks out on the world through imagination and the good mind which contemplates the scene without physical limitations." Report of New York Institute, 1931, p. 32.

NOTE TO CHAPTER XIX.—[For much of the material for the foregoing chapter, there are to be thanked a number of blind persons, with whom there have been interviews or correspondence. The list of references to follow is of rather wide range, and with concep-

tions of blindness from various points of view. It includes, besides general works, those devoted to personal sketches, experiences of individual blind persons, popular accounts, as well as those presenting divers attitudes towards the blind. Works relating to blind persons are included only to the extent that blindness is their distinguishing or their leading feature, or constitutes their mainspring, or is the matter about which they center. Works of fiction are not included (unless clearly based on fact). Works of the nature of psychology are but sparingly embraced. Articles in religious periodicals are not in general given. Minor notices of blind persons are for the most part not considered. Reprints of articles in periodicals are not in general included.] On popular conceptions regarding the blind, see C. M. Sawyer, "History of Blind Vocalists," 1852; A. V. Courtney, "Anecdotes of Blind," 1835; A. V. Courtney, "Adventures of Blind Man and His Faithful Dog," 1856; W. H. Prescott, "Biographical and Critical Miscellanies," 1845, p. 53; B. B. Bowen, "Blind Man's Offering," 1857; Thomas Bull, "Sense Denied and Lost," 1859; M. G. L. Duncan, "America as I Found It," 1852, p. 335; Alexander Mitchell, "The Blind, Their Capabilities, Condition, and Claims," 1860, pp. 5, 22, 36; B. G. Johns, "Land of Silence and Land of Darkness," 1857, p. 93; B. G. Johns, "Blind People, Their Works and Ways," 1867; John Kitto, "Lost Senses," 1845; Thomas Anderson, "Observations on Employment, Education, and Habits of Blind," 1837; Richard Fowler, "Some Observations on Mental State of Blind and of Deaf and Dumb," 1843; Alfred Payne, "Education of Blind and of Deaf and Dumb," 1863; Sarah Robinson, "Light in Darkness," 1876; "Trimsharp's Account of Himself" (H. A. Fuller), 1873; W. R. Buxton, "Blind Minister," 1899; William Artman and L. V. Hall, "Beauties and Achievements of Blind," 1854; W. H. 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CHAPTER XX

COSTS OF BLINDNESS

COSTS OF BLINDNESS TO INDIVIDUAL

The final matter to call for attention in respect to the existence of the blind in society is that of the loss involved in blindness, personally and to the community, that is, the cost of blindness, both to the individual and to the state.

In the mere absence of the sense of vision, there results to a human being a deprivation to which few if any other earthly ills are to be likened. But in the full effect of blindness, with all its implications, there are found to be included a burden and a hardship in addition to the want of sight itself.

Almost as severe as is the actual loss of sight are the long hours of idleness which so frequently must follow. It is not an idleness which lasts but for a season; it is one that endures through life. Blindness draws after it usually, a life of dependence. Only the smaller number of the blind are able to engage remuneratively in the tasks of other men. Most occupations are closed to them, and upon the few that are open the limitations are many. Among those industrially employed earnings are for the most part modest in the extreme. For their support in life, the blind have thus in large part to look to others. With their blindness is often indigence.

This dependence of the blind upon others, however, does not stop here. In many circumstances of their daily coming and going it happens that persons with sight must be called upon for assistance. As a guide in locomotion, as a reader of current events or of other literature, as a helper in various details of daily action, and in many other relations of life, an accommodating brother or friend cannot well be dispensed with. Much of the information, furthermore, that comes to the blind must be obtained second-hand, with the possibility that to a greater or less extent it is colored, even though unintentionally, by the medium through which it is conveyed.

In blindness there is imposed upon the vitality a strain of no small consequence, in the taxation of the powers of memorization, of hearing, and of the nervous system—a strain but little realized by those not acquainted with it.

With blindness there all too often goes a gap between those bearing it and those spared it. The result is that the blind miss the full and ready understanding which they should have, that they in considerable degree lose the helpful sympathy which should be theirs, and that they have to live in a world, not of darkness alone, but in very large measure of seclusion as well.

The blind must endure not a few misconceptions on the part of the public, a large portion of which are to their hurt. They have to accept a status which may not rightfully be theirs—here an underrating, there an overrating, but very widely a misunderstanding. Perhaps they must bear the consciousness that they are regarded as a peculiar species of the human race, differentiated in one or more respects from the rest of mankind. They can never escape having thrust upon them the existence of their affliction; in innumerable ways is it brought home to them. The compassion engendered for their condition may be carried to uncalled-for lengths, with attentions to them often not arising from thoughtful consideration, and at times even of officious nature. What is accorded them may too frequently be in a spirit and with an air of condescending pity; they must remain passive recipients of whatever favors are extended them; they must know that they exist largely on the bounty or largess of those who give to them; it may all be as a bare act of charity, a one-sided indulgence incapable of being returned—possibly with greater heed to the satisfaction or relief of the donor with his sight than to the actual interest or benefit of the receiver with his blindness.¹

GENERAL ECONOMIC LOSS IN BLINDNESS

A phase of the cost of blindness has relation to the extent to which blindness acts as a bar to gainful occupation—that is, the economic loss in man power to the working force of the United States resulting from this affliction. By comparison of the number of blind persons who are gainfully employed with the number who but for their blindness might be so, some light may be thrown upon the matter. It is to be remembered that an exceedingly large number of the sightless are in advanced years, a great portion of whom would have in any event retired from active labor, and would not be industrially employed even if in possession of their vision. The number of blind persons in the United States who have become blind at twenty years of age or older, and who before the loss of sight were gainfully employed, is approx-

¹ On the loss involved in blindness, see *Bulletin of Massachusetts Commission for Blind*, 1909, no. 1, p. 16; *Ohio State Medical Journal*, vii., 1911, p. 435.

imately 44,000.¹ The number of blind persons becoming blind at this age and still gainfully employed (though not necessarily at the same occupation) is 9000. There are thus 35,000 blind persons, or 79.8 per cent of their entire number, becoming blind in adult life, who are apparently shut out of gainful activity in consequence of their infirmity. The actual loss of man power, however, is not quite so great. Of the blind losing sight in adult life and once gainfully employed, at least 12,000 lost it after sixty-four, or at a time when persons generally have ceased economic activities. In addition, of the 32,000 blind persons between twenty and sixty-five years of age who were gainfully employed before the loss of their vision, 11,000 (35.9 per cent) must have reached the age of sixty-five (the unknown number of persons not being included who during this period have had to discontinue economic activities at the onset of blindness). There are accordingly at least 23,000 blind persons once occupied, and who are now sixty-five years of age or over. There thus remain 12,000 blind persons under sixty-five years of age who were once gainfully occupied, but are not now—that is, the number who are because of their blindness precluded from remunerative employment. Of the blind population, furthermore, between the ages of twenty and sixty-four (62,000), 27,000 (42.8 per cent) lost their sight prior to the twentieth year. Of these 20,000 (74.4 per cent) are not gainfully employed. This represents the number of blind persons in early or middle adult life, or in the active working age, and becoming blind before adult life, who might be remuneratively employed but for their blindness, and are thus debarred from gainful occupation. If we add to it the number still in the period of economic activity who have been compelled by reason of blindness to surrender their occupational pursuits, we have 32,000 (or 56 per cent of all between twenty and sixty-four years of age) as the approximate number of blind persons who are directly prevented by reason of their want of vision from participation in gainful occupation. Of this number some 18,000 are males, and 14,000 females. Of males in the general population about four-fifths are gainfully occupied, and of females about one-fifth. The proper figures with the blind are then 14,000 for males and 3000 for females—or a total of 17,000.

Another way of estimating the extent to which the blind are rendered incapable of being assimilated into the economic forces of the country is to compare the number of the blind found to be gainfully occupied with the number in the general population. The propor-

¹ These estimates (in round numbers) are on the basis of a blind population of 100,000, with the proportions according to age and according to age of occurrence of blindness taken from the census figures for 1920.

tion for the latter ten years of age and over is 50.3 per cent, while that for the former is 18.1 per cent. If the proportion for the general population be applied to all the blind, their number gainfully occupied would be approximately 48,000. But as only 17,000 are actually so, it appears that 31,000 are barred by their blindness from economic activity. As, however, two-fifths of the blind are over sixty-four years, or beyond the working period of life, while only 4.7 per cent of the general population are so, this number should be reduced by 34.7 per cent, so that the total number of the blind withdrawn from gainful tasks as a result of their blindness is some 20,000.¹

COSTS OF BLINDNESS TO STATE

Apart from the economic loss to the state in the removal of the blind from its body of potential productive workers, there is entailed upon it a serious financial burden in direct outlays of money in their behalf. A particular single item of expense is in connection with the special schools which have to be provided for the instruction of blind children. Requiring extraordinary facilities for its accomplishment, this education is much more costly than that of normal children. The annual charge for the support of schools for the blind in the country amounts, in round numbers, to almost \$4,000,000. The value of the plants used for educational purposes is at least \$17,000,000, a sum which at 5 per cent interest would represent annually over \$800,000. If blind children could be educated in the regular schools where the cost is hardly over \$75 a year for each pupil, the amount would perhaps not exceed \$500,000. Hence the net cost of the education of the blind comes to something over \$4,000,000 annually.

For other forms of provision for the blind there are additional sums directly disbursed. For special homes (for adults and for children) probably not less than \$400,000 is expended annually; for industrial establishments (apart from their earnings), about \$1,000,000; for pensions (from public funds), hardly under \$5,000,000; for public commissions (or similar agencies) for the blind, possibly not less than \$500,000; for the work of various private organizations in behalf of the blind, a sum probably somewhat larger than that last named; and for other forms of work for the blind, including the preparation of reading matter, library facilities, and home teaching, a sum probably not much less—or a total of not far from \$8,000,000. If this is added to the

¹ In these calculations there are included a certain proportion of the partially blind whose difficulties in securing employment are relatively less pronounced. No reference is made to the limitations upon the earning power of those of the blind assumed to be gainfully employed. A certain proportion of the blind in the later or advanced years of life might but for their blindness have saved up a competence for their maintenance.

amount expended for education, we have \$12,000,000 as the amount expended directly for the blind each year in the United States.

Another particular expense in consequence of the existence of blindness lies in the compensation afforded for loss of eyesight each year in the United States under workmen's compensation laws.¹ If for total or practically total blindness occurring in industry, the amount be taken as one-half of previous wages (a smaller proportion seldom being allowed, and sometimes a larger), for a period of ten years on the average (compensation generally continuing for from a few years to life), with \$1000 regarded as a normal annual wage, then on the basis of 100 cases of total blindness, there is paid out for compensation something like \$600,000 a year; or on the basis of 150 such cases, \$900,000.²

If we employ the amounts of compensation paid in certain individual States as a basis for the entire country, we have the amount expended for total blindness hardly less than \$500,000, possibly approaching \$1,000,000—estimates not greatly different from those just made.³ Costs of medical and hospital services are probably little less than one-third of the costs of compensation. There is thus expended for blindness occurring in industry in the United States a sum in excess of \$1,000,000.⁴ Loss of earnings to those made blind can hardly be less than the amount of compensation (without regard to losses to employers).⁵ The full loss involved in this is well over \$2,000,000. If indemnities for loss of sight otherwise secured are added, the amount is still further increased.

Finally, are to be added the amounts expended directly or indirectly for the prevention of blindness. These can hardly be less than \$500,000 a year. There are thus paid out in the United States annually for the blind or with respect to the occurrence of blindness a sum not far from \$15,000,000.

All this, however, does not represent the total cost of blindness.

¹ See Chapter LII.

² For the loss of one eye or for permanent partial disability (compensation lasting for two years being regarded as a fair mean), there is paid, on the basis of 3000 cases, \$3,600,000 a year; or on the basis of 3500 cases, \$4,200,000. For all accidents to the eye the amount is perhaps to be doubled.

³ Possibly a sum between \$3,500,000 and \$8,000,000, or more likely between \$4,500,000 and \$6,000,000, may be regarded as expended for loss of one eye or for permanent partial disability.

⁴ For the loss of one eye or for permanent partial disability the amount is probably not less than \$10,000,000. For all accidents to the eye the amount is hardly under \$20,000,000.

⁵ Indirect losses from such blindness are asserted to be several times direct losses. On the matter of costs for compensation for injuries to the eye, see in particular National Society for Prevention of Blindness, "Eyes Saved in Industry," 1930; *Safety Engineering*, liii., 1927, p. 264; liv., 1927, pp. 72, 130; *Monthly Labor Review*, xxv., 1927, 1, July, p. 54; xxvii., 1927, 6, Dec., p. 1189; *News Letter*, Oct., 1929; June, 1930.

There is to be superimposed the amount expended for the care of the blind. If, as we have found, there are approximately 17,000 blind persons between twenty and sixty-four years of age who in consequence of their blindness are denied remunerative work, and if of these one-eighth have means of their own, and one-fifth are able by their labor to support themselves, we find some 12,000 who require special attention in the way of maintenance from outside—a finding that of itself takes on added significance from the circumstance that a not inconsiderable portion of these would under ordinary conditions, or with the possession of sight, be the supporters of families. Supposing the cost of support of each to be \$300 a year (which is the mean maximum allowed under the pension systems), we have some \$4,000,000 to represent the cost necessary for the care of those blind persons who in general would otherwise be able to look after themselves.¹ Of this sum possibly one-half is to be covered under the cost of pensions, special homes, and industrial establishments already referred to. If we add the amount previously found to be expended with respect to the blind, our total is now in the neighborhood of \$17,000,000.

There is a still further cost of blindness to the nation—the economic loss mentioned above. This is to be measured by the extent of the diminution of the wealth of the country by the removal from it of a certain portion of its otherwise qualified producers. The question may be approached to some extent through the matter of earnings which would otherwise be due citizens now blind. If the annual earnings of a normal able-bodied male worker be taken as \$1200, and of a like female worker as \$700,² then the total potential loss in earnings of the 14,000 blind males and of the 3000 blind females between twenty and sixty-four years of age who are directly prevented by reason of their blindness from engaging in gainful occupation is some \$19,000,000. As, moreover, slightly over one-half of the male blind, or 8000, and seven-tenths of the female blind, or 2000, who are reported as gainfully employed, or 10,000 in all, are not self-supporting, we may consider such possibly on the average to be in need of not less than \$150 to supplement their earnings—or somewhat under \$2,000,000. This makes the full annual loss due to the want of earning power of the blind close to \$21,000,000. To complete our estimates, we may place with this the amounts already stated as expended on behalf of or in regard to the blind, which gives us the approximate sum of \$38,000,000—or, in

¹ If a blind individual lives forty years in the working period of life, and the cost of his support each year amounts to \$300, his entire cost is \$12,000.

² The average annual income of a male worker in the United States is \$1205 (1927). W. I. King, "National Income and Its Purchasing Power," 1930, p. 87. The earnings of a woman worker is generally regarded as about three-fifths of those of a man.

round numbers, a little short of forty million dollars—as the total annual cost of blindness in the United States.¹

¹ On the subject of the cost of blindness, see *Annals of Academy of Political and Social Science*, xxvii., 3, 1911, p. 274; *New York State Journal of Medicine*, xii., 1912, p. 279; *Illinois Medical Journal*, xx., 1911, p. 291; xxi., 1912, p. 416; *Ohio State Medical Journal*, v., 1909, p. 469; *Archives of Ophthalmology*, xlv., 1915, p. 521; *Journal of American Medical Association*, lxvi., 1916, p. 393; *The Child*, i., 1912, June, p. 23; *Ophthalmic Record*, xxiii., 1914, p. 516; *Journal of Ophthalmology, Otology and Laryngology*, xx., 1914, p. 495; *Southern Medical Journal*, viii., 1915, p. 968; *Journal of Ophthalmology and Oto-Laryngology*, x., 1916, p. 103; *Annals of Ophthalmology*, xxiii., 1914, p. 752; Report of New York State School, 1896, p. 55; Report of Massachusetts Commission for Blind, 1912, p. 10; Proceedings of National Conference of Charities and Correction, 1909, p. 91.

PART III

PROVISION FOR EDUCATION OF BLIND CHILDREN

CHAPTER XXI

EDUCATION OF BLIND PRIOR TO ITS INTRODUCTION INTO UNITED STATES

The lot of the blind in human history has ever been a sad one. The most that they could usually expect at the hands of their fellow men has been pity. Among the nations generally, including the ignorant and barbarous, there might have been evoked a certain measure of compassion for the sightless folk who lived in their midst.¹ By religions kindly treatment was as a general thing enjoined.² Sometimes a less indulgent attitude was extended, more than one instance of harsh usage of them being found.³ Among such highly civilized peoples as the Greeks and the Romans there was for the most part indifference to the fate of the blind, and occasionally actual cruelty toward them was displayed. Now and then in individual cases the blind were employed for some useful purpose, as in serving as guides through dark places or as depositories for the memorization of religious or national lore, or less happily, as fortune tellers or as entertainers.⁴ With not a few of the ancient, and even of modern, peoples the affliction of the blind was looked upon as a divine visitation; and in divers forms was the question asked: "Who did sin, this man, or his parents?"

The rôle of the blind man was ordinarily that of the beggar, and his due was the commiseration and alms of the kindly-disposed, with perhaps here and there the maledictions of the evil-hearted.

From Bartimæus to Lesueur—the first pupil of Haüy—the blind were left to procure a precarious subsistence begging at the entrance of temples, in the churchyards, or by the wayside. Their infirmity was considered a sufficient cause to prevent them from participating in the activities of life and from enjoying the blessings of instruction or the benefits of industry.

¹ Among the peoples of Egypt and India some humane care of the blind is recorded.

² In the Bible there are a number of such instances. See, for example, Leviticus, xix., 14. See also John McClintock and James Strong, "Cyclopedia of Biblical, Theological, and Ecumenical Literature," 1890, i., p. 833; William Smith, "Dictionary of Bible," 1893, i., p. 442.

³ Blind children were at times left to perish through exposure. Occasionally blind persons have been subjected to base uses. There have been instances where the blind have been accorded special privileges.

⁴ A particular useful service of the blind was in acting as guides across deserts, and in leading people through the streets of cities in times of darkness or heavy fog. In certain countries the blind have been employed to memorize their histories in greater or less part.

They were even allowed at times to become the objects of harsh and inhuman pastime in the hands of ignorant and vicious people.¹

It is only after the advent of the Christian era that any pronounced change is found in the general attitude towards the blind. To the churches where charity was dispensed they gladly came, and here they could expect to inspire a lively sympathy in the breasts of worshippers, from which might spring aid of a more substantial kind. At monasteries and hospitals they might look for some friendly or welcoming hand. In the course of time the Church is found displaying more direct concern in the blind, and attempting on a greater or less scale to meet their physical wants. In its early history are discovered not a few references to the blind.

In the fourth century a hospice was established for the blind by St. Basil at Cæsarea in Cappadocia, in connection with a larger institution, with guides furnished for them. In the century following a refuge was offered to the sightless by the hermit St. Lymnæus at Syr in Syria, special cottages being erected for their use. Towards the middle of the seventh century a retreat, or typhlocomium, was set up at Jerusalem for their benefit. Not long after a kind of hospice was created for them by St. Bertrand, bishop of Le Mans, which was probably at Pontlieu in Northwestern France. Similar institutions were brought into being in several places in France, Italy, and Germany.²

In 1178 at Memmingen, Bavaria, Duke Welf VII. created a home for certain of the blind, in which it seems possible that some sort of instruction was given. In 1254 there was established the most important institution for the blind so far brought into existence. This was at the time of the Crusades when a number of the Crusaders returned to Western Europe with their sight destroyed, either as a result of punishment inflicted at the hands of the Saracens or as the result of diseases contracted in their expeditions. For these an asylum was created at Paris by Louis IX., or St. Louis, known as the *Hotel des Quinze-Vingts*, in which several hundred blind persons found a refuge. Later other persons, including women, who had lost their sight from various causes were admitted. For the support of this home, begging was encouraged on the part of the inmates, direct gifts also coming to it from the charitably inclined. Somewhat later similar

¹ M. Anagnos, "Education of Blind," 1882, p. 4; Report of Perkins Institution, 1881, p. 53. Occasionally among the blind there has been found a sort of confraternity for begging. At times they were exploited by others in their begging.

² In the eleventh century William the Conqueror, in expiation of his sins, as was believed, founded among other institutions hospices for the blind and other infirm persons at Cherbourg, Rouen, Bayeux, and Caen.

but smaller institutions were founded at Chartres, Tournai, and Strassbourg. Like ones were in the thirteenth and fourteenth centuries established in other countries of Europe as well as in France, notably at Bruges, Ghent, Padua, Palermo, Hanover, Swansea, and London. Brotherhoods for the service of the blind were also organized in a number of cities, including Chartres, Caen, Châlons, Meaux, Padua, Frankfort, and Hull. In addition, hospitals and other institutions for the needy and suffering continued their ministrations in behalf of the blind.¹ In time when the cities and nations of Europe came to recognize in a civil capacity their obligations to the poor and the infirm, the blind were given more or less of a place in their attentions.²

During all this period there is met scanty reference to attempts to impart instruction to the blind. No doubt there were not a few individual efforts here and there to give this, mostly by word of mouth, and especially to such as had become blind some years after birth when there had already been opportunity to acquire something of an education after the manner of other children, and to those of the classes who were privileged to have an education at all. It is not until we reach the sixteenth century, when learning was receiving attention on all sides, that, so far as we have recorded accounts, the light of knowledge begins really to dawn for the blind.

Among the first efforts with which we are acquainted to bring instruction to the sightless was that of Girolimo Cardano, the physician of Pavia in Italy, in the sixteenth century. Having become interested in the deaf and their education, he conceived the idea that the blind might be taught through the sense of touch, and attempted to procure to some extent instruction for them. About the same time, a blind man, Peter Pontanus, a Fleming, published a book regarding the blind and their possible instruction. In 1646 there appeared in Italy an anonymous publication, "*Il Cieco Afflito e Consolato*," in France called "*L'Aveugle Affligé et Consolé*." In 1670 another treatise on the blind was given to the world, this by Padre Lana Terzi of Brescia in Italy, who had likewise previously written of the deaf: by him also was attempted certain instruction. Not long after we find one or two instances in Switzerland of instruction afforded to blind persons. In the latter country there was written in the early part of the eighteenth century a book by Jacques Bernouilli on the teaching of mathematics to the blind.³

¹ Records of charities, or pensions, or foundations left for the benefit of the blind are found in London in 1467 and later years; and also in other cities of England.

² The blind are expressly mentioned in the English Poor Law of 1601 (43 Eliz. 3 ch. 2).

³ At nearly all times there have been instances of blind authors, most having probably become so after their loss of sight.

Accompanying all the endeavors to convey instruction to the blind were attempts to provide a means whereby they could be made to read by the pressure of their fingers upon objects in relief—that is, to contrive a device whereby printed words could be made known to them. In the desire to secure a system of tangible characters for use by the blind, many were the experiments that were tried.¹ In lieu of any successful efforts in this direction instruction had to be imparted largely by word of mouth.

Prior to the offering of formal education to the blind, especially in the late years of the seventeenth, and in the early years of the eighteenth century, there developed considerable interest in them and in their condition, which was largely on the order of speculation as to their intellectual powers and faculties, and as to their general possibilities. This was chiefly on the part of philosophers and other men of learning, and also on the part of physicians, who seemed most often to come into contact with them.² In the literature of the times there are frequent descriptions of cases of blindness.³

We now come in our accounts of the instruction of the blind to a name that is forever to shine afar in the narrative of efforts to aid those deprived of the sense of sight—the name of the man with whom the real work in their education commences—Valentin Haüy. This man lived in Paris, France, towards the close of the eighteenth century, and was drawn to the notice of the blind by certain of the abuses to which they were subjected.⁴ Moved with pity at their fate, he began

¹ The various efforts to devise a system of raised print for the blind are considered in Chapter XXXVI.

² In England John Locke in his "Essay upon the Human Understanding" made references to the intellectual processes of the blind. (See "Philosophical Works," i., p. 202.) In George Berkeley's "Essay toward New Theory of Vision," 1709, chs. xli., lxxix., xcii., xciii., cx., there is also mention of the blind. In Germany Leibnitz referred to the blind and to the condition of their minds. In France Condillac in his "*Essai sur l'Origine des Connaissances Humaines*" and "*Trailé des Sensations*" considered the effects of blindness upon the powers of perception. In 1750 Denis Diderot wrote his "*Essai sur les Aveugles*," and in 1798 his "*Lettre sur les Aveugles à la Usage de Ceux Qui Voient*," in which he discussed their intellectual condition and possible means of raised print for them. Rousseau also became interested in the blind, and served to arouse public concern in them. The Abbé Deschamps who had taken an interest in the education of the deaf turned his attention late in the eighteenth century to the blind also, of whom he wrote.

³ See, for example, *Philosophical Transactions* (Royal Society of London), xxxv., 1727, p. 447; abridged, vii., p. 491; 1801, p. 382; 1807, p. 83; 1815, pp. 1-78; *Medical Observations and Inquiries* (London), i., p. 111; iii., p. 120; London Ophthalmic Infirmary, "Views on Prevention and Causes of Blindness," 1728. See also *The Tatler*, no. 55, 1709, p. 172; *Annual Register*, *passim*; *Gentleman's Magazine*, *passim*. See, in addition, Richard Allestree, "Art of Patience and Balm of Gilead in All Afflictions," 1684, p. 124 (1702); G. Burnet, "Some Letters . . .," 1686; *Medical and Physical Journal* (London), v., 1801, p. 68; viii., 1802, p. 572.

⁴ Haüy's first interest in the blind arose from the sight at a fair of a number who were dressed in grotesque fashion and were pretending, with notes placed before them, to play instruments of music, in order to make discordant noises and thus to draw a crowd to the house of their patron.

to wonder if they might not be educated and their condition changed for the better. All the information that was possible regarding them he collected, especially as to previous attempts to give them instruction. Finding that the processes hitherto employed were scant, consisting of little more than a ciphering frame and a few characters in wood or metal, made out with the utmost difficulty, he determined to set about the task of imparting instruction as best he could, hoping as he went along to come upon the necessary measures.¹ In 1784 he discovered a blind boy, François Lesueur by name, begging on the streets. This boy Haüy took as his first pupil, offering him pay as compensation for his lost occupation. Upon Lesueur were begun the experiments in the way of instruction. The great difficulty lay in finding a means of conveying the printed word in such fashion as to be apprehended by his sightless pupil; and upon this Haüy labored most industriously. In time a means came to light, and the education of the blind was assured.

In such manner began the first school to be established in the world for the blind. To it was given the name of *L'Institution Nationale des Jeunes Aveugles*. It was taken under the patronage of *le Société Philanthropique*, which entrusted to Haüy twelve blind children, agreeing to their support. At the results achieved the city of Paris was overjoyed, and many donations found their way to the new institution.² In 1786 Haüy published his "*Essai sur l'Education des Aveugles*." In 1791, after the outbreak of the Revolution, the school was taken over by the state, and continued thereafter to be a public institution.³

The work of the education of the blind had now been inaugurated in Europe, and it only remained for the other countries to follow the example set by France. This was accomplished in most of them within a few years, Great Britain being the first to follow. In 1791 a school was opened in Liverpool; in Edinburgh and Bristol in 1793; in London in 1799; in Glasgow in 1804; in Norwich in 1805; in Dublin in 1809; and later in other cities. The early years of the nineteenth century also saw schools started in most of the capitals of the Continent: in Vienna

¹ Haüy had been much impressed with the public performance of a blind girl in a musical recital, Theresa von Paradis, the gifted blind girl of Vienna, who had been taught by special means.

² The Royal Academy of Sciences made examination of the work, especially of the newly found raised print, and gave its approval; while Haüy was himself received by the King.

³ Haüy continued for some years after the troublous days of the Revolution to support the school at his own expense. When in 1801 it was incorporated with the *Hotel des Quinze Vingts*, he resigned and opened a private school of his own, which he called "*Le Musée des Aveugles*." In 1806 he was invited to St. Petersburg to found a school, which invitation he accepted, on his way establishing a school at Berlin also. In 1817 he returned to France, there to die five years later, having well earned the title of "the Father and Apostle of the Blind."

in 1804; in Berlin and Stockholm in 1806; in Milan in 1807; in Amsterdam, Dresden, and Prague in 1808; in St. Petersburg and Zürich in 1809; in Copenhagen in 1811; and in Brussels, Lausanne, and Breslau in 1816. In the course of the ensuing years schools were founded in various other cities of Europe.¹ By the time the task of instruction was to pass on to America, which was towards the close of the third decade of the nineteenth century, the work was already upon an established footing in the Old World.

¹ Certain of the schools for the blind in Europe were started in connection with homes or asylums.

NOTE TO CHAPTER XXI.—For accounts of the early work for the blind before and after it was taken up in America, the following may be referred to: Valentin Haüy, "Essay upon Education of Blind," 1786; Sebastien Guillié, "Essay on Instruction and Amusements of Blind," 1819; J. G. Knie, "Guide to Proper Management and Education of Blind Children," ed. 1876; Abbé C. Carton, "Establishments for Blind in England," 1838; Thomas Anderson, "Observations on Employment, Education, and Habits of Blind," 1837; Charles Baker, "Contributions to Publications of Society for Diffusion of Useful Knowledge," 1842, p. 49; B. B. Bowen, "Blind Man's Offering," 1857; John Alston, "Statements of Education, Employments, and Internal Arrangements of Asylum for Blind" (Glasgow), 1836; James Gall, "Historical Sketch of Origin and Progress of Literature for Blind," 1834; Alfred Payne, "Education of Blind and Deaf and Dumb," 1863; "Trimsharp's Account of Himself," 1873, p. 54; R. H. Blair, "Education of Blind," 1876; George Combe, "Notes on United States of North America," 1841, ii., p. 168; William Artman and L. V. Hall, "Beauties and Achievement of Blind," 1854; W. H. Prescott, "Biographical and Critical Miscellanies," 1845, p. 53; William Chapin, "Report on Benevolent Institutions of Great Britain and Paris" (Ohio School), 1846; Henry Hendrickson, "Out from Darkness," 1879, p. 53, and *passim*; Robert Meldrum, "Light on Dark Paths," 1891; F. A. Goodale, "Literature of Philanthropy," 1893, p. 170; J. W. Welch, "Abilities and Achievements of Blind," 1905, p. 268; W. H. Levy, "Blindness and Blind," 1872, p. 77; J. R. Friedlander, "Observations on Instruction of Blind Persons," 1833; J. T. Sibley, "The Blind, Their Characteristics and Education," 1891; A. C. Smith, "Orphan Blind Girl," 1865; H. A. Fuller, "Where Dark Shadows Play," 1890, p. 50; S. F. C. Little, "Education of Blind" (Wisconsin Teachers Association), 1879; "The Blind Made Happy," 1837; M. Anagnos, "Education of Blind," 1882; E. E. Allen, "Education of Defectives" (in "Education in United States," monograph, no. 15), 1900, p. 18; L. E. Richards, "Two Noble Lives," 1911, p. 30; E. E. Allen, "Historical Sketch of Life and Labors of J. R. Friedlander," 1903; Maurice de la Sizeranne, "The Blind as Seen through Blind Eyes," 1893, p. 52; W. H. Illingworth, "History of Education of Blind," 1910, p. 4; James Gray, "What Is Doing for Blind," 1862; C. F. Fraser, "Fighting in Dark," 1879, p. 17; Robert Maguire, "The Deaf and Dumb and Blind," 1863; E. R. Scott, "History of Education of Blind Prior to 1830," 1916; E. B. F. Robinson, "True Sphere of Blind," 1896; J. C. Lettsom, "Hints Designed to Promote Beneficence, Temperance, and Medical Science," 1801, ii., p. 117; J. M. Ritchie, "Concerning Blind," 1930; J. F. Cobb, "Heroes of Charity," 1876, p. 210; E. G. Dexter, "History of Education in United States," 1904, p. 473; F. B. Sanborn, "Dr. Samuel Gridley Howe, the Philanthropist," 1891, p. 125; J. V. Armstrong, "History and Prospects of Tennessee School," 1898; R. S. French, "Education of Blind," 1924; R. S. French, "From Homer to Helen Keller," 1932, pp. 31, 58, 98; F. F. Caldwell, "Comparison of Blind and Seeing Children in Certain Educational Activities," 1932, p. 4; In Memoriam, John Dennison Russ, 1881; Memorial Tribute to Character and Virtues of Dr. Joseph H. Johnson, 1893; Memoir of Samuel Gridley Howe, 1876, p. 13; H. J. Wagg, "Chronological Survey of Work for Blind," 1932; Penny Cyclopaedia, 1835, iv., p. 515; British Cyclopaedia, 1835, i., p. 215; Globe Encyclopaedia, 1876, ii., p. 413; Universal Encyclopaedia and Atlas, 1909, ii., p. 55; National Encyclopaedia, 1888, iii., p. 4; English Encyclopaedia, 1859, i., p. 194; Chambers' Encyclopaedia, 1861, art. "Blind"; Harmsworth Encyclopaedia, 1910, i., p. 780; American Encyclopaedia, 1867, ii., p. 349; Students Encyclopaedia, 1883, i., p. 413; Encyclopaedia Britannica, 1929, art. "Blind"; Encyclopaedia and Dictionary of Education, 1921, i., p. 187;

Cyclopedia of Education, 1879, p. 85; 1911, i., p. 395; American Encyclopedia and Dictionary of Ophthalmology, 1916, i., p. 249; viii., p. 6372; Nelson's Encyclopedia, 1917, ii., p. 136; Reference Handbook of Medical Sciences, 1913, ii., p. 96; Catholic Encyclopedia, 1909, v., p. 306; Transactions of Royal Scottish Society of Arts, 1895, p. 10; Transactions of National Association for Promotion of Social Science, 1868, p. 410; Transactions of Royal Society of Edinburgh, 1818, p. 137; Transactions of International Congress on Hygiene and Demography, 1892, iv., p. 224; Preliminary Report of 8th Census, 1860, 1862, p. 41; Population of United States, 8th Census, 1864, pp. lxx., 687; Report of United States Commissioner of Education, 1871, p. 445; 1872, p. 433; Report of Massachusetts Board of Charity, 1864, p. 68; Report of Illinois Board of Public Charities, 1876, p. 129; Report of Pennsylvania Board of Public Charities, 1870, p. 148; Report of Tennessee Board of Charities, 1903, p. 34; Indiana Bulletin of Charities and Correction, June, 1912, p. 206; Bulletin of Iowa Institutions, ii., 1900, p. 453; xiii., 1911, p. 230; Proceedings of American Association of Workers for Blind, 1911, p. 10; Proceedings of American Association of Instructors of Blind, 1876, p. 11; 1892, p. 62, and *passim*; Proceedings of Celebration of 100th Anniversary of Birth of Samuel Gridley Howe, 1902, p. 14; Address of Trustees of New Institution for Education of Blind to Public, 1833; Account of New York Institution for Blind, 1833; Proceedings of Association to Establish School for Education of Blind in Pennsylvania, 1833; Report of Trustees Appointed to Collect Information Relative to Education of Blind (Ohio), 1836; Ceremonies at Laying of Corner Stone of New York State School for Blind, 1866; Commemoration of 70th Anniversary of Founding of North Carolina School, 1910, p. 21; Origin and History of Georgia Academy for Blind, 1887; Proceedings of 1st Reunion of Officers, Teachers, and Pupils of New York State School, 1879, p. 66; History of Illinois School, 1893; Report of Perkins Institution, 1871, p. 29; 1874, pp. 10, 33; 1876, p. 89; 1881, p. 49; 1882, p. 117; Iowa School, 1891, p. 10; Tennessee School, 1891, p. 11; Ohio School, 1855, pp. 17, 25; 1893, p. 141 (5th reunion of former pupils, 1890); Pennsylvania Institution, 1883, p. 8; 1901, p. 47; Arkansas School, 1870, p. 8; New York Institute, 1845, p. 14; Maryland School, 1903, p. 60; 1913, p. 72; New York State School, 1867, p. 43; Louisiana School, 1873, p. 31; *Monthly Review*, xcv., 1821, p. 32; *Pamphleteer*, vi., 1915, p. 333; *New England Magazine*, iv., 1833, p. 177; xv. (n. s.), 1897, p. 673; *Southern Literary Messenger*, ix., 1843, p. 6; *North American Review*, xxxi., 1830, p. 66; xxxvii., 1833, p. 20; l., 1840, p. 520; *Western Monthly Magazine*, iii., 1835, p. 150; *National Magazine*, viii., 1856, p. 540; x., 1857, pp. 33, 121, 247, 419; *Southern Bivouac*, iv., 1885, p. 407; *Harper's Magazine*, xxxv., 1867, p. 767; *Hogg's Instructor*, xv., 1856, p. 130; *National Review*, x., 1860, p. 75; *Canadian Monthly Magazine*, xviii., 1880, p. 171; *Catholic World*, xlviii., 1889, p. 671; *Scribner's Magazine*, xii., 1892, p. 373; *Pedagogical Seminary*, ix., 1902, p. 127; *Literary and Theological Review*, iii., 1836, p. 266; *De Bow's Review*, xvii., 1854, p. 435; *Hibbert Journal*, viii., 1909, p. 142; *Good Words*, xxi., 1880, p. 763; *Mentor*, ii., 1892, p. 288; *Edinburgh Review*, xx., 1812, p. 462; xcix., 1854, p. 61; *Edinburgh Magazine and Review*, ii., 1774, p. 673; *Quarterly Review*, cxviii., 1865, p. 430; *Chautauquan*, xv., 1892, p. 65; *Positivist Review*, xxv., 1917, p. 255; *Museum of Foreign Literature, Science, and Art*, xxiv., 1834, p. 230; *Monthly Review*, cxxxii., 1833, p. 175; *American Journal of Education*, i., 1830, p. 370; i. (n. s.), 1856, p. 551; iii., 1857, p. 477; iv., 1857, p. 127; *Home and School*, ii., 1873, p. 594; *New England Pictorial Magazine*, i., 1881, p. 45; *American Annals of Education*, iii., 1833, p. 577; vi., 1836, p. 252; *American Journal of Ophthalmology*, xxvi., 1909, p. 131; *Lens*, ii., 1904, p. 2; *Talks, Tales, and Public Opinion*, Nov., Dec., 1901; Jan., Feb., 1902; *Gentleman's Magazine*, cclxxv., 1898, p. 137, and *passim*; *Annual Register*, *passim*; *English Magazine and London Review*, *passim*; *Scottish Magazine and Edinburgh Literary Miscellany*, *passim*; *The Blind*, *passim*; *Braille Review*, *passim*.

CHAPTER XXII

HISTORY OF EDUCATION OF BLIND IN UNITED STATES

FOUNDING OF FIRST SCHOOLS

The education of the blind in the United States formally began with the opening of the first school. Before this there were no doubt, as in Europe, certain occasional instances of instruction essayed in some small way by the families or friends of the sightless; but such instruction could hardly have been other than a very meagre one, and could have seriously affected but a very few. For the great number of the blind, children as well as adults, means of education were not to be had.

Upon the establishment of schools for the blind in Europe in the late years of the eighteenth and the early years of the nineteenth century, it might be expected that at a not distant date systematic instruction would be undertaken in America, in a soil equally congenial. In the opening, furthermore, of the first schools for the deaf in the United States in the year 1817 and the ensuing years, attention to the educational needs of the blind was likely to become the more pronounced; and it was only a question of time until efforts should follow to create schools for them as well.

Before the close of the eighteenth century a faint interest in the blind and in the possibilities of their education was to be discerned, amounting, however, to little more than a cursory notice.¹ Before the following

¹ One of the earliest references to the blind in the United States (*cf. ante*, p. 260) was in the form of a petition in 1682 by a blind man for exemption from taxation (which was duly granted). See Records of Governor and Company of Massachusetts Bay in New England, 1674-1686 (1854, v., p. 377); *Historical Magazine*, iii., 1868, p. 85. A reference somewhat later was in the *Massachusetts Magazine* in 1789 (i., p. 27), where an account is given of the efforts for the instruction of Mademoiselle de Salignac, taken from the *New London Magazine* (iii., 1762, p. 202). In the same magazine in 1791 (iii., p. 99) there is an account of Dr. Henry Moyes, the blind philosopher, prepared by Dr. George Bew for the Literary and Philosophical Society of Manchester, England (Memoirs, 1785, p. 159). In the *American Museum* in 1792 (xi., pp. 27, 103) there appears a review of Dr. Bew's essay, of a speculative character and dealing with the powers of the blind, entitled "Observations on Blindness and the Employment of the Senses to Supply the Loss of Sight." In the *Encyclopedia or Dictionary of Arts, Sciences, and Miscellaneous Literature*, published in Philadelphia in 1798 as an American edition of the English work (iii., p. 283), there is a long article upon the subject of the blind, including an account of several blind persons, but with little reference to the matter of education. In the *Port Folio* of Philadelphia in 1806 (i., pp. 52, 132) there appears an account of Thomas Blacklock, the blind poet. In the *Analectic Magazine* of Philadelphia in 1815 (vi., p. 378) there is taken a review of a work on blindness and its prevention, from the *Critical Review of London* (iv., 1816, p. 659). In the *Athenæum or Spirit of English Magazines* of Boston in 1820 (vi., p. 221) an

century was far advanced, concern in the blind began to make itself felt in more than one quarter, and at the same time to take on a more practical character. Towards the end of the second decade of the century this had reached the stage where it seemed expedient that public inquiry should be set on foot to determine the number and condition of the blind, which was usually to embrace the deaf as well—such constituting the first real legislative recognition of the blind in the country. In 1819 an enumeration was authorized in New Hampshire, in 1821 in Pennsylvania, in 1825 in Vermont, and a few years later in Connecticut and Massachusetts. Further attention was directed to the blind from their inclusion for the first time in the returns of the United States census of 1830.

During the progress of these investigations, and in part as a result of them, an interest was awakened in the blind which resolved itself into the consideration of the actual establishment of schools for their instruction. This interest was strengthened by the tidings that continued to come to America of the institutions in successful operation in Europe, with the prompting of the query why similar undertakings might not be brought into being in this country as well. Signs of promise for the creation of schools first manifested themselves in three cities on the Atlantic seaboard—Boston, New York, and Philadelphia.

In the early years of the nineteenth century in the city of Boston and in its vicinity serious inquiry began to be made on the part of certain persons as to the possibilities of the education of the blind, and the feasibility was discussed of organizing a movement for the purpose.¹ Little, however, was accomplished till 1826 when a strong impetus was given to the movement upon the return to the city of a physician, Dr. John D. Fisher, from Paris, where in the course of his studies he had had occasion to visit the school founded by Valentin Haüy, with

account is given of the school for the blind in Vienna, taken from the *Monthly Magazine* of London (xlviii., 1819, p. 218; *London Magazine*, i., 1820, p. 511), in 1820 also (vii., p. 388) a reference to the possibilities of raised print for the blind, and in 1821 (ix., p. 89) a narrative regarding a blind man. In the *Missionary Herald* in 1823 (xix., p. 21) reference is made to the condition of the blind. In the *New England Galaxy* in 1822 (Aug. 30) there is mention of certain blind characters in Scotland, in 1827 (Feb. 27) a description of the school at Vienna, and in 1828 (Aug. 15) a description of the schools at Paris and Liverpool. In the *American Journal of Education* in 1830 (i., p. 79) mention is made of the school at Paris, taken from the *Boston Commercial Gazette*. In the *North American Medical and Surgical Journal* in 1831 (xi., p. 29) the school at Naples is described. For accounts of cases of blindness at this period, see *Medical Repository*, v., 1802, p. 92; *Medical Museum*, ii., 1806, p. 310; *New England Journal of Medicine and Surgery*, vii., 1818, p. 100. See also *Annals of Philosophy* (London), v., 1815, p. 153; x., 1917, p. 286.

¹ Letters on the advisability of the creation of a school appeared in the *Columbian Centinel* of Boston, Jan. 19, March 28, 1825, in the *Boston Recorder*, Feb. 6, 1829, and in *National Philanthropist and Intelligencer*, March 12, 1829. See also *American Journal of Education*, i., 1830, p. 79; *Christian Teachers Manual*, ii., 1829, p. 258; *Classical Journal and Scholars Review*, 1830, p. 188; *Christian Register*, March 21, 1829.

the work of which he had been much impressed. The agitation in favor of the establishment of a school was now redoubled, and more and more encouragement was lent to the project. In 1827 a sum of money was raised to collect information both in regard to the number of pupils to be affected and in regard to the proper steps to be taken for the starting of a school.¹ A number of philanthropic citizens became enlisted in the enterprise,² and several meetings were held. Finally, a gathering was invited of all those who were interested in the matter, which was held on February 10, 1829, at the Exchange Coffee House. Here the question of a school was taken up at length, and a report made of the conditions calling for it. It was estimated that there were four hundred blind persons in Massachusetts, and fifteen hundred in the New England States. So urgent was the need felt to be that the outcome of the meeting was the actual organization of a school. Before another month had elapsed, the legislature was asked to incorporate this as the New England Asylum for the Purpose of Educating the Blind, later to be known as the Perkins Institution and Massachusetts School for the Blind, which it did unanimously and without debate, at the same time directing that the number and condition of the blind in the State should be ascertained.³ In order that the State might itself have a hand in the management of the new institution, the board of trustees was made to include the Governor of the State, the Lieutenant-Governor, the President of the Senate, and the Speaker of the House of Representatives.

To take charge of the school and to conduct its operations, and to secure pupils for it, there was called Dr. Samuel Gridley Howe, a physician, who had already shown himself warm in the espousal of human causes.⁴ Before the actual opening, it was decided that he should proceed to Europe and learn the methods there employed for teaching the blind. This Dr. Howe did in 1831, visiting the schools in Edinburgh, Paris, and Berlin.⁵ Though apparently not finding everything in these places worthy of emulation, he saw much to aid him in his future work. On his return to America, he brought with him two blind teachers to assist him, one from the Edinburgh school and one from the Paris school.

The school in Boston was now ready to assume its task. Temporary quarters were found in the house of Dr. Howe's father, later being

¹ Report of Perkins Institution, 1874, pp. 33, 10.

² One of the early organizers was William H. Prescott, the historian, himself blind.

³ Express authorization was given for the receiving of donations, bequests, etc.

⁴ Efforts were also made to secure the services of Thomas Hopkins Gallaudet, who had started the first school for the deaf at Hartford, Connecticut, in 1817. See Heman Humphrey, "Life and Letters of Thomas Hopkins Gallaudet," 1857, p. 235.

⁵ *American Annals of Education*, i., 1831, p. 445.

transferred to a rented building. In August, 1832, the school received its first pupils, six in number, and was now started on its appointed way.¹

In 1830, or two years before the opening of the school, the legislature of Massachusetts made an appropriation for its benefit, consisting of \$1500, which was the unexpended balance of a previous grant for the deaf, this being the first appropriation of public money in America directly for the benefit of the blind. The year following the inauguration of the school an exhibition of pupils was given in the presence of the legislature; and so favorable was the impression made by them that a new appropriation of \$6000 was forthwith voted, on the condition that twenty poor blind children of the State should be educated free. The school, however, did not rely solely upon the state for its support. It sought assistance from private sources as well. Pupils were taken for exhibition to a number of cities to solicit contributions from the public, while entertainments of various kinds were given to raise funds.²

Though the new school had its location in Massachusetts, it was not for the children of this State alone that it was designed. It was intended to receive children from all the New England States, and in fact to be a common school for them. Very soon after the school had commenced its operations these States began to make arrangements for the education of their blind children in it, with the appropriation of a certain amount for each pupil, Massachusetts itself also adopting the plan; and this policy has been largely continued to the present by all of them. Connecticut and New Hampshire took action in 1832, the year the

¹ *Ibid.*, iv., 1833, p. 93; *New England Magazine*, iv., 1833, p. 248.

² One notable fair at Faneuil Hall netted over \$11,000, while similar generosity was met with in other cities. Soon after the school was started, a house valued at \$25,000 was offered by one whose name was subsequently given to it, on condition that \$50,000 in addition be raised, which was done in less than a month. On the beginnings of this school, see "New England Asylum for Blind," 1829; Address of Trustees of New England Institution for Education of Blind to Public, House Document, no. 25, 1833; *Penny Magazine*, i., 1833, p. 44; *Boston Weekly Messenger and Massachusetts Journal*, April 4, June 6, 1833; *Boston Inquirer*, March 9, 1833; *Christian Watchman*, of Boston, March 29, 1833, Nov. 27, 1839; *New England Magazine*, iii., 1832, p. 171; iv., 1833, pp. 154, 504; *American Annals of Education*, iv., 1834, p. 3; *Religious Magazine*, Boston, iii., 1833, p. 160; *Monthly Review*, cxxii., 1833, p. 275; *North American Review*, I., 1840, p. 520; *New England Palladium and Commercial Advertiser*, Boston, Jan. 22, 1835; *New England Pictorial Magazine*, i., 1881, p. 45; *Bulletin and Republican*, June 31, 1830; *Salem Mercury*, May 18, 1836; *Christian Register*, c., 1921, p. 300; *Hibbert Journal*, viii., 1909, p. 139; *Survey*, xxiv., 1910, p. 880; Robin Carver, "History of Boston," 1834, p. 134; Maude Howe and Florence Howe Hall, "Laura Bridgman, Dr. Howe's Famous Pupil and What He Taught Her," 1903, p. 1; Laura E. Richards, "Life and Journals of Samuel G. Howe," 1909, ii., p. 11; Florence H. Hall, "Memories Grave and Gay," 1918, p. 121; Memoir of Samuel Gridley Howe, 1876; Proceedings at Celebration of Birth of Samuel G. Howe, 1902; Brief Summary of History of Perkins Institution, 1900; National Cyclopaedia of American Biography, 1900, viii., p. 372; Dictionary of American Biography, 1931, ix., p. 296; Report of Perkins Institution, 1876, pp. 89, 92; 1882, p. 11; 1921, p. 29; 1932; 1933; F. B. Sanborn, "Michael Anagnos," 1906; Proceedings of Centennial Exercises of Perkins Institution, 1933; Gabriel Farrell, "Centennial of Perkins Institution," 1932.

school was started; Massachusetts and Vermont, in 1833; Maine, in 1834; and Rhode Island, in 1845.¹ One other State, considerably removed from New England, also made provision for the instruction of its blind children at this school for a time. This was South Carolina, which began the policy in 1843.² At the same time pupils whose expenses were paid from private means were sent to the institution from various parts of the country.³

Great as is the distinction of being the initial school for the blind to be organized in the United States, to which the institution at Boston is properly entitled, this is really to be placed but very little ahead of the schools in New York and Philadelphia. In point of fact, to the school in New York belongs the honor of being the first to begin actual operations. This school, the New York Institution for the Blind, later called the New York Institute for the Education of the Blind, came into being largely as the result of the interest on the part of some citizens of the city in certain blind children in the almshouse, who had attracted attention as early as 1827. Correspondence followed with the school in Edinburgh, Scotland, regarding the methods to be employed in instruction; and in 1831 a petition was presented to the legislature of the State, praying for the incorporation of the institution, which was at once done. On March 15, 1832, the school threw open its doors. It was under the direction of Dr. John D. Russ, and had but three pupils, all coming from the almshouse, which number was shortly afterwards increased to six. In 1834 the State began to allow the sum of \$160 for each pupil admitted, which was later enlarged. Many private contributions were made to the school, which were added to by the proceeds from fairs and exhibitions of pupils.⁴ In 1836 the State of

¹ See *ibid.*, 1834, p. 6; 1844, p. 5; *Rhode Island Educational Magazine*, i., 1852, p. 145; ii., 1853, p. 3. First appropriations were of one thousand dollars, more or less.

² Report of Perkins Institution, 1846, p. 5; 1849, p. 4.

³ The work of Dr. Howe was not confined to the school in Massachusetts. He proved a circuit rider for the establishment of schools in other States. With his pupils he appeared before the legislatures of a number of States, besides visiting many cities, to urge their creation.

⁴ It was one Samuel Wood who had first observed the children in the almshouse, and Dr. Samuel Akerly who had inserted an advertisement of an intention to incorporate a school (and who had been principal of another school, which had recently been organized, the New York Institution for the Instruction of the Deaf and Dumb). Dr. Russ likewise independently conceived the idea of educating the blind, and visited the almshouse to ascertain the number there, being ignorant of the purposes of the others. In 1833 there was an exhibit of pupils in the City Hall. Annual fairs given by ladies from 1833 to 1838 netted the school the sum of \$9075. A single fair at Niblo's Theatre in 1833 realized \$2173. A building was furnished at a small rental, and later sold at a low price. See *American Annals of Education*, ii., 1830, p. 303; Account of New York Institution for Blind, 1833; Report of New York Institute, 1836, p. 3; 1845, p. 14; 1931-1933; "At End of First Century," 1932; C. M. Sawyer, "History of Blind Vocalists," 1852, p. 45; In Memoriam, John Dennison Russ, 1881; Fanny Crosby's "Life Story by Herself," 1903, p. 30. See also New York newspapers of the period.

New Jersey began to send pupils to it.¹ Private pupils also were admitted.

The school in Philadelphia, the Pennsylvania Institution for the Instruction of the Blind, was started in 1833, or one year after those in Boston and New York. Efforts had, however, been made several years sooner for the establishment of a school. The Society of Friends had been interested in the education of the blind as early as 1824; and in this year as well as the two following ones consideration was given to the project by them and by other citizens. There was also correspondence with respect to the schools in Europe. In 1833 several meetings were held in the rooms of the American Philosophical Society, which culminated in the organization of the institution. On the opening of the school, Dr. Julius R. Friedlander, a native of Germany, was appointed principal, he having already gathered several pupils in his own home the year before for the purpose of teaching them. Funds were realized from fairs, from subscriptions, and from other means, pupils being taken to a number of counties for exhibition. After a visit of pupils to the legislature of the State, the school was incorporated. This latter body offered as well an appropriation of \$10,000 on condition that double this sum be secured from private sources, which was done in a short time.² Pupils were also sent to neighboring States, with the result that provision was made for the education of blind children at this school by Delaware in 1835, by New Jersey in 1836, and by Maryland in 1837.³ Pupils supported by private means were, as in the case of the preceding institutions, received at the school.

The fourth school to be created was in Ohio in 1837, after a visit to the State of pupils from the institution in Massachusetts, and after agitation on the part of the medical society of the State.⁴ The establish-

¹ The first appropriation was of \$2000.

² In 1836 a ladies' fair netted the school \$9039. It was an early hope that the school might benefit from a legacy for a local hospital for the lame and the blind. See Proceedings of Association for Establishment of School for Education of Blind in Philadelphia and Pennsylvania, 1833; Report of Committee Appointed to Inquire into Best Mode of Extending Benefits of Instruction to Blind, Pennsylvania, 1837; Constitution, Charter, By-Laws, and Documents Relating to Pennsylvania Institution, 1837, p. 12; Constitution, By-Laws, and Rules of Pennsylvania Institution, 1856, p. 29; Report of Select Committee Relative to Instruction of Blind in Pennsylvania, 1838; J. R. Ingersoll, Address Delivered at Opening of Wills Hospital for Indigent Blind and Lame, 1834; E. E. Allen, Historical Sketch of Life and Labors of J. R. Friedlander, 1903; W. H. Furniss, Discourse Occasioned by Death of J. R. Friedlander, 1839; *Westchester Advocate* (Pennsylvania), Nov. 21, 1833; Aug. 9, 1834. See also *Philadelphia United States Gazette* and *Poulson's American Daily Advertiser* of the period. See, in addition, Report of Pennsylvania Institution, 1932.

³ The first appropriation was for 10 pupils, the cost of each of whom was not to exceed \$200.

⁴ See Report of Ohio School, 1856, p. 14; Perkins Institution, 1837, p. 12. A census of the blind of the State was made by this medical body in 1834, when 250 were found. Hope for the establishment of a school had been expressed in 1835 by the *Western Monthly Magazine* (iii., p. 150).

ment of this school marked a new policy in the course of the education of the blind in the country. The schools henceforth, with the exception of that in Maryland, of one or two in the New England States, and of a second one in Pennsylvania, were to be entirely under the direction of the State, and not under the auspices of private societies, though in not a few cases such bodies were to be instrumental in their initiation.

Virginia came next in 1839 with a school for both the blind and the deaf, after an exhibit of pupils from Massachusetts. In Kentucky in 1842 the establishment of a school was brought about after similar appearances of pupils from the schools in Ohio and Massachusetts, though there had been attempts in this direction a few years earlier. This school was during its first year a private one, after which it was taken over by the State. In Tennessee a private school was opened in 1843, likewise after exhibits of pupils, which two years later was adopted by the State. In 1847 a school was established in Indiana after a visit from pupils of the Ohio and Kentucky schools. In Illinois a private school was opened in 1848, after exhibits of pupils, which the following year came under the control of the State. A school was created in Mississippi in 1848, and one in Wisconsin in 1849, the latter having been planned several years sooner. In 1850 a private school was started in Missouri, which the succeeding year was taken over by the State. In 1851 a school was established in Georgia, though some blind children had been educated since 1846 in the school for the deaf; and a department for the blind was created in such school in North Carolina. In 1852 a private school was undertaken in Iowa, to be adopted by the State the following year. A school under private auspices was commenced in Maryland in 1853. In 1855 a department for the blind was opened in the school for the deaf in South Carolina.¹ In 1856 a school was established in Texas, and a department for the blind was created in the school for the deaf in Louisiana. Thus a little after the middle of the nineteenth century, or twenty-five years after the opening of the first school, institutions for the blind were in existence in nineteen of the States of the Union. In the next quarter of a century schools were established in ten other States; and since that time in most of the remaining ones.

VIEWS OF EARLY SCHOOLS AND AIMS AND METHODS OF FOUNDERS

In the creation of the schools for the blind in America the chief appeal was to the heart. It was usually only necessary to invoke commiseration for their lot to secure the desired action. At the prospect of

¹ Almost a score of years previously there had been consideration of a school, though designed primarily for the deaf.

bringing light to the darkened minds of the blind, there were few who could not be moved; and in the compassion for their condition and in the hope of emancipating them from it, the pursestrings of legislatures and of public assemblages were willingly loosened. This was especially true when there were exhibitions of pupils from the schools just started: the spectacle of the poor sightless creatures and of what was being done for them was nearly always sufficient to stir the beholders to a favorable response.

On the part of the public in general there was thus usually appreciation of the work which the schools proposed to do, and often keen sympathy with and ready support of the efforts both to bring them into being and to place them in successful operation. Yet, as was after all to be expected, in large part because of the novelty of the undertaking, there was, despite ardent assurance to the contrary, not a little doubt expressed in certain quarters as to the feasibility of the movement. In some instances the purpose of the schools was but dimly seen, or was far from being understood. Just what was to be the practical end of the education contemplated was not clear; nor was it evident how the blind were really to be benefited, or in what their advantage was to consist.

More than one school experienced something other than an easy task in overcoming the objections to their work and in dissipating the conceptions regarding them. On the inception of one institution there were some who "laughed at the project as a wild undertaking;" while "even the benevolent looked upon it as a well-meant, but utopian scheme."¹ By this school the situation was discovered to be thus:

At the time the institution was incorporated, so strong was the impression that the enterprise was one, which, though it might produce some curious and ingenious results, was not of practical utility, that it was a matter of some difficulty to find among our many intelligent and benevolent citizens twenty gentlemen who were willing to be appointed its first board of managers.²

Odd opinions were held as to what the schools were intended for. In regard to the school just referred to—

Many supposed it to be an Infirmary for the treatment of the eye,—that its inmates would necessarily be subjected to needless surgical operations, involving much personal suffering, with no apparent object perhaps, beyond the advancement of Surgical Science;—others assumed that it was an Asylum for the indigent Blind, erected for the purpose of testing by actual ex-

¹ New York Institute. Report, 1845, pp. 14, 22.

² *Ibid.*, 1841, p. 5.

periment the lowest possible sum upon which its subjects might be fed and clothed.¹

Another school, in which the blind and the deaf were educated together, had to begin its existence with the attitude towards it expressed as follows:

The idea of instructing the deaf-mute and the blind in the higher branches of learning was a novel one . . . and was regarded by many as unwise and visionary. . . . Even the most enlightened doubted whether the ultimate effects would be beneficial to the pupil and to society.²

It has also been stated:

It was a doubtful venture, in the estimate of many, when those hopeful philanthropists . . . established, with the coöperation of a group of their friends, an institution "for the purpose of instructing children who have been born blind or who may have become blind by disease or accident." . . . But a presentation in due form of arguments to show that the blind are capable of instruction "in literature and the mechanic arts" was necessary to convince the . . . legislators and the public.³

In other instances uncertainty was expressed as to whether the blind could actually be instructed; and it was only the achievements of such pupils themselves that dispelled the misgivings on this score.

As a result of this attitude, the actual creation of schools was now and then delayed, and public support of them temporarily held back. The *North American Review* ⁴ of the time tells how people were willing to extend assistance to the schools "as soon as their practicability was proved." Legislatures were sometimes incredulous as to the advisability of creating schools, and required evidence of the success of the venture before guaranteeing aid.⁵ In one or two States they were so dubious as to the scheme that before they would agree to assist, they demanded a continuation of a year or two, so as to have a demonstration to their satisfaction.⁶ In order to win public favor, the promoters found it necessary to move very carefully. In one case—

¹ *Ibid.*, 1845, p. 5.

² Virginia School. Report, 1854, p. 23 (quoting from first report).

³ Report of New York Institute, 1931, p. 31.

⁴ *I.*, 1840, p. 520.

⁵ When a private school was started in Missouri, an appeal was made to the legislature for assistance. The reply from this body was that there were "only a few blind persons in Missouri, the United States census to the contrary notwithstanding;" and that "it would be time, labor, and money lost to teach the blind to read or do anything else." Nothing daunted, however, by this reception, the promoters of the school borrowed a piano, and secured five volumes of the Bible in raised print; and with these weapons, and in company with several blind children, invaded the halls of the legislature. This proved too much for the members of that body, and haste was made to grant the desired appropriation. Missouri School, "Story of Blind," 1901.

⁶ Notably the schools in Kentucky and Missouri.

It was thought best to proceed in the most cautious, prudent, and economical manner until the results should amply vindicate the policy and utility as well as the beneficence of the philanthropic enterprise.¹

Now and then at the beginning a school was called a "specimen school."²

It was in fact in not a few instances the proof of the mental capabilities of the blind that won for them their schools. When books were placed in their hands, and when it was discovered that they really could be taught to read, whatever lurking misgivings there had been were swept away, and only delighted satisfaction remained. The matter has thus been stated:

It is certain that the simple reading by blind children of a few lines from a book aided more to create and endow the institutions now existing than all other things put together.³

With the education of the blind now a demonstrated possibility, there were on all sides only gratification and joy. Towards the schools everywhere the feeling became one of warm interest and affection. Their future was believed to be bright with promise; and in many places there appeared enthusiastic friends of the new venture, who watched with happy eyes the first steps in the work of the instruction of the blind. As the full meaning of this education dawned on the public, the rejoicing was doubly pronounced. In the schools the blind were not only to receive enlightenment and to become unqualified citizens of the state, but they were to be raised from their condition of sorrow and dependence, and lifted to a position never before occupied by them. Just as there had been general commiseration for the plight of the blind, so now hopes were high that the gladdening light in all its radiance might be brought to minds that had been in darkness.

In various phrases is expressed the sadness of the lot of the blind, and the results to be derived from education; nay, the powers of language are strained to find words befitting the situation. In an early message of the Governor of Georgia in regard to the school in that State, the condition of the blind is thus referred to:

The sightless objects of its care are entitled to the sympathy and aid of every patriot and philanthropist. . . . To them, earthly existence is one

¹ Kentucky School. Report, 1851, p. 3. On general misapprehensions regarding the education of the blind, see also Report of Indiana School, 1866, p. 66; Michigan School, 1856, p. 34; 1866, p. 24; Kentucky School, 1882, p. 7; *New England Telegraph*, ii., 1836, p. 236.

² On the general feasibility of educating the blind, see Memorial to Senate and House of Representatives of Massachusetts, House Document 22, 1833.

³ Report of Perkins Institution, 1846, p. 19. See also *Poulson's American Daily Advertiser*, of Philadelphia, Jan. 10, 1834.

long, dark, monotonous night, without a glimmering star to enliven its gloom.¹

In a message of the Governor of Virginia to the legislature of that State when a school was being proposed, mention is made of the "long and wearisome night which is allotted to the blind."² In a report of a committee of the legislature of the State of Maine, created to investigate the condition of the blind, and to consider the advisability of their education, it is set forth that "a long night of darkness has been permitted to close upon them."³ In a sermon preached shortly after the opening of the school in Virginia the feelings of the blind man are thus characterized: "The crushing sense of his blindness fills all his hours with hopeless misery."⁴ In an early report of the Illinois School the state of the blind is described as "mental and physical torpor in which they have previously passed their lives."⁵ In an early report of the Ohio School theirs is said to be "a gloomy and comfortless and despondent condition."⁶ In a report of the Georgia School the blind are said to be "doomed . . . to a dreary, blank, helpless, and unmeaning existence."⁷ A Pennsylvania paper at the time of the establishment of a school speaks of the blind as "pining away in gloom and despondency."⁸ The *New England Magazine* in the early days speaks of the blind as men "whom misfortune had condemned to grope their way darkling through time to eternity;"⁹ and of "the dark blank of their existence."¹⁰ A writer in the *American Annals of Education* of the same period considers the blind to be in the "dark tomb of the world,"¹¹ and declares that their minds are "shrouded in darkness," and that without education they are to "spend all their remaining years in continued gloom and night."¹² The *Literary and Theological Review* affirms the blind to be "eating the bitter bread of dependence."¹³ In a report of the Kentucky School they are said to be persons "upon whom the blighting hand of misfortune had fallen so heavily"; and who were "doomed for life to ignorance, dependence, and misery."¹⁴ In an "Address to the Citizens of the State of Delaware" in

¹ Report of Georgia School, 1856, p. 8.

² Journal of Senate of Virginia, 1833, p. 14.

³ Laws of Maine, 1834, p. 665.

⁴ J. H. Tyler, "Duty and Advantages of Educating Deaf and Dumb and Blind," 1843.

⁵ Report, 1856, p. 7.

⁶ Report, 1837, p. 8.

⁷ Report, 1866, p. 8.

⁸ *Westchester Advocate*, Aug. 13, 1834.

⁹ iv., 1833, p. 504.

¹⁰ iv., 1833, p. 178.

¹¹ iii., 1833, p. 579.

¹² vi., 1836, p. 252.

¹³ iii., 1836, p. 266.

¹⁴ Report, 1851, p. 3.

1834 on the need of making provision for education, the "dark and desolate minds of the blind" are spoken of, who are "condemned through life to darkness."¹ In a report of the Tennessee School it is stated that the blind are "doomed to a life of idleness and miserable dependence," and that "their moral sensibilities become obtuse, and their intellectual and physical powers enfeebled";² and in another, that "the dungeon is still about" the blind man.³ In an address in connection with the opening of the Pennsylvania Institution it is said that from the blind "the cheery beams of hope are excluded, and in their stead prevail the clouds and darkness of despair."⁴ In the *Western Monthly Magazine* the blind are asserted to live in a "land of shadows and silence."⁵ In an early pamphlet regarding the Pennsylvania Institution the state of the blind is mentioned as being one of "hopeless darkness, wretchedness, and misery."⁶ In an "Address to the Inhabitants of New York" before the opening of a school for the blind in this State, the aim is expressed as "a desire to recover them from degradation and ignorance." In an early report of the New York Institute the lives of the blind are said to be "spent in darkness and gloom."⁷ In an early account in Tennessee they are affirmed to be "shrouded in darkness."⁸ In an Ohio account the blind are believed to be in "a worse than physical darkness."⁹ In an early report of the Pennsylvania Institution the "helplessness, gloom, and degradation" of the blind are referred to, who are thought to have upon them "the stamp of infirmity which even pity had inflicted upon their helplessness."¹⁰ In an "Address to the Public" at the beginning of this school, the blind are called an "unfortunate class of human beings," upon whose "condition helplessness and misery are generally attendant."¹¹ In a report of the Perkins Institution mention is made of the "thick gloom" in which the blind dwell, who on the loss of sight are "at first like one buried alive."¹² In a Kentucky report the blind are affirmed to dwell "in physical, intellectual, and mental darkness," and to experience

¹ Pp. 5, 7.

² Report, 1845, p. 11.

³ *Ibid.*, 1857, p. 12.

⁴ Address Delivered on Opening of Wills Hospital, 1834, p. 11.

⁵ *iii.*, 1835, p. 151.

⁶ "Observations on Means Employed in Pennsylvania Institution," 1833, p. 4.

⁷ Report, 1841, p. 6.

⁸ Report of Board of Charities, 1903, p. 39, quoting from "History of Davidson County."

⁹ Proceedings of Reunion of Officers and Pupils of Ohio School, 1860, p. 1.

¹⁰ Report, 1835, p. 7.

¹¹ Report, 1834, p. 7.

¹² Report, 1848, p. 9. In the same report of this school the blind man without education is thus spoken of: "He has before him the dreary prospect of a life of dependence upon relatives and friends. Beyond that lies the cheerless scene of an old age and a death-bed in an almshouse." *Ibid.*, p. 11.

"a living death." ¹ In the "Methodist Almanac," in connection with the beginning work in Indiana, it is declared that "to be blind is to dwell in a living tomb." ² Of the blind without education it is said: "Instead of being improved either physically, mentally, or morally, they are rapidly and inevitably gravitating lower and lower in the scale of humanity." ³

From the existing condition of the blind, it was the schools that were to bring the great deliverance. The notes in which this is promised reach a high strain. The "rescue," the "emancipation" of the blind, their being raised to "the ranks of their fellow-men"—such are some of the phrases in which the lofty purpose is expressed. Thus the *Christian Examiner* of Boston at an early date states regarding the blind, who had been reported as in "eternal darkness and gloom," that by instruction their "rational powers have been awakened as it were from a deep sleep," that the "fetters on their souls" have been removed, and "the bright world of knowledge and of love" which otherwise was "forever barred" was opened to them, and that "the spirit is released from bondage, restored to its native functions, and filled with the ecstasy of thought." ⁴ In an Ohio report it is declared that "the once dark minds are cheered by the light of science," and that "their souls are irradiated." ⁵ In a report of the Kentucky School the blind after education are found to be "rejoicing in the light and gladness shed around them." ⁶ In a report of the Arkansas School it is said that by education the blind "are raised from a state of helpless and hopeless idleness and dependence to a life of joyous activity and usefulness." ⁷ The *Western Monthly Magazine* in speaking of the results of the first schools declares that "the progress of the Eastern institutions . . . has surpassed all expectations," and that "our reward shall be the spectacle of thousands raised to competence and responsibility." ⁸ In a court decision in Georgia the education of the blind, along with that of the deaf, is referred to as a "revival of miracles." ⁹ Finally, it is declared as to the education of the blind that "there are no assignable limits to the sphere of its happy influences in the years to come." ¹⁰

¹ Report, 1847, p. 7.

² 1863, p. 39.

³ *Harper's Magazine*, xlviii., 1874, p. 738.

⁴ xxviii., 1840, pp. 359, 363. The accounts of the blind "are not surpassed by those of the novelists."

⁵ Report, 1839, p. 12.

⁶ Report, 1847, p. 7.

⁷ Report, 1868, p. 8.

⁸ ii., 1835, pp. 155, 160.

⁹ *Potts v. House*, 6 Ga., 324, 50 Am. Dec., 329 (1849).

¹⁰ *Boston Medical and Surgical Journal*, xlv., 1851, p. 165. See also *Religious Magazine*, vii., 1837, p. 347. On views of the blind without education, and the results promised therefrom, see also J. R. Ingersoll, Address Delivered at Opening of Wills Hospital for Indi-

In these schools, moreover, not only was mental enlightenment to be afforded, but very practical ends were to be served. In them the pupils were to be given a training in industry, so that they could be sent out into the world able to support themselves. In most cases from the very beginning attention was called to this feature of the work of the schools. In an early report of the New York Institute we find that the purpose was not "yet solely to render cheerful and happy those whose previous lives had been spent in darkness and gloom, but to render the objects of our care, to society, useful members."¹ In some schools the purpose was avowed to "offer education and a useful professional or manual art." The full object is even more explicitly brought out in the statutes of some of the States in which the establishment of schools is provided for. Thus in Michigan is it declared that the school is to—

Educate the blind and to afford them instruction in such useful arts and trades as they are best adapted to pursue, and such as will best enable them to maintain themselves.

The aim of the schools in Illinois and Wisconsin is given as follows:

To qualify as far as practicable that unfortunate class of persons for the enjoyment of the blessings of free government, obtaining the means of subsistence, and the discharge of those duties, social and political, devolving upon American citizens.

To such an extent was the idea of education in all its bearings fixed upon the schools that it was felt in many quarters that no other charge

gent Blind and Lame, Philadelphia, 1834; Address of Trustees of New England Institution for Education of Blind, 1833; Constitution, Charter, By-Laws and Documents Relating to Pennsylvania Institution, 1837; Address of Board of Managers of Pennsylvania Institution, 1837; J. R. Friedlander, "Observations on Instruction of Blind Persons," 1833; J. R. Friedlander, Address to Public at First Exhibition of Pupils of Pennsylvania Institution, 1833, p. 5; *United States Gazette*, Philadelphia, Nov. 22, 1833; *Poulson's Daily Advertiser*, Philadelphia, Nov. 22, 1833; "Observations on Means Employed in Pennsylvania Institution," 1834; "New England Asylum for Blind," 1829; New York Institution for Blind, Brief Account of Its Organization, Character, and Prospects, 1843; J. H. Tyler, "Duty and Advantages of Educating Deaf and Dumb and Blind," 1843; Journal of House of Representatives of Indiana, 1848, p. 26; Journal of House of Representatives of Texas, 1860, p. 37; *New England Magazine*, iv., 1833, p. 177; *American Annals of Education*, iii., 1833, p. 579; vi., 1836, p. 252; *Western Monthly Magazine*, ii., 1835, p. 150; *American Institute of Instruction*, 1836, p. 3; *Christian Examiner*, xxviii., 1840, p. 359; xlv., 1848, p. 448; Report of Trustees Appointed to Collect Information Relative to Education of Blind, Ohio, 1836; Missouri School, "Story of Blind," 1901; Addresses Delivered at Laying of Corner Stone of North Carolina School, 1848; Circular of Information of Iowa School, 1853; Circular of Information of Wisconsin School, 1856; Origin and History of Georgia School, 1887, p. 11; Proceedings of American Association of Instructors of Blind, 1853, p. 3; Proceedings of Reunion of Officers and Pupils of Ohio School, 1860, p. 6; Message of Governor of Ohio, 1839, p. 26; Message of Governor of New York, 1830, p. 8; Message of Governor of Connecticut, 1841, p. 15; Robert Walsh, "Didactics," 1836, p. 80; Report of Pennsylvania Institution, 1834, p. 7; New York Institute, 1837, p. 27; 1839, p. 40; 1844, p. 34; Illinois School, 1853, p. 8; Indiana School, 1855, p. 18; Louisiana School, 1870, p. 18; 1873, p. 55 (quoting from *La Grande Era*, May 17, 1873); Ohio School, 1842, p. 13; Virginia School, 1850, appendix.

¹ Report, 1841, p. 6.

acter could be ascribed to them. A "charitable" basis for them was disclaimed, and even opposed; and it was hoped that they would stand only in the light of educational institutions, with no other stamp recognized.¹ The *North American Review* at the beginning expressed the prevailing opinion: "We want not to maintain the blind, but to put them in the way of contributing to their own maintenance."² At times pains were taken to establish the true function of the schools, and to announce that they were not "charitable," or that they were not "asylums"—though in not a few instances there was little unwillingness manifested to put to the fore the philanthropic nature of the undertaking, when by such an appeal needed funds were likely to be attracted.³

EXTENSION OF MEANS OF INSTRUCTION OVER COUNTRY

The education of the blind, once begun in the United States, was not to be long in spreading over the land. As the success of one school became apparent, increased efforts were put forth for the creation of others; and in a number of States the movement for the establishment of institutions was early on foot.⁴ The *North American Review* in 1830, just before the opening of the first school, thus spoke of the situation with respect to the blind:

Immured within hospitals and almshouses, like so many lunatics or incurables, they have been delivered over, if they have escaped the physical, to all the moral contagion too frequently incident to such abodes, and have thus been involved in a mental darkness far more deplorable than their bodily one.⁵

The approaching establishment of a school it hailed with delight. In an issue three years later, as the initial schools were put into operation, it commented:

¹ See Report of Indiana School, 1860, p. 13; Kentucky School, 1845, p. 7; New York State School, 1866, p. 53; Missouri School, 1872, p. 6; Louisiana School, 1873, p. 12; Tennessee School, 1875, p. 12. In a circular issued at the opening of the Kansas School, it is asserted to be "strictly an educational establishment." Report, 1869, p. 14.

² xxxi., 1830, p. 84. See also W. H. Prescott, "Biographical and Critical Miscellanies," 1845, p. 80; Address to Public (Pennsylvania Institution), 1833.

³ Such designation was applied more often in the case of the early schools in the East, a not unusual appellation being "this noble charity." It is found also in connection with other schools. See Report of Illinois School, 1865, p. 5; Texas School, 1874, p. 12. In a report of the Tennessee School it is said to be "not an asylum but a school," though a few lines farther down it is called "this noble charity." 1859, p. 5. The first report of the Pennsylvania Institution was accompanied with the statement that its object was "the instruction of the blind," which was "incompatible with that of an asylum for the indigent blind." For a contrast of the two purposes, see Report of Pennsylvania Institution, 1920, p. 34. See also *Boston Medical and Surgical Journal*, xxxvi., 1847, p. 223.

⁴ In fact, at times there was fear that schools were being established more rapidly than was justified by the number of pupils who might attend them.

⁵ xxxi., p. 66. See also *ibid.*, xxxvii., 1833, p. 20.

Public opinion has lately been aroused to the importance of the subject. One institution has been put into efficient operation in Boston, a second has been organized and is about commencing its operations in New York, and a third is in a state of forwardness in Philadelphia.¹

In another magazine of the period, the *American Annals of Education*, encouragement was found in the outlook. It asserted:

There are as yet but few establishments of the kind in the country, but if we may judge from the interest which these few have excited and continue to excite, we cannot but confidently hope that their number will soon be increased.²

By the *American Journal of Science and Arts* it was found that the work of the schools themselves "affords the best ground of confidence that success will attend" them.³

The expectations thus inspired were not vain. In various communities earnest and capable men were found who were willing to take upon themselves the task of organizing and directing schools, some of whom threw themselves into it with a splendid ardor. There were many others also, sympathizers and supporters, who displayed a warm interest in the progress of the new undertaking, and were ready in one way or another to assist. The early workers for the blind were in general men of unusual character and attainments. Certain of them were physicians who turned with zeal to this fresh labor for humanity, while men of other callings proved themselves hardly less responsive. Ministers of the Gospel played a notable part, particularly in calling attention to the need, some of them being untiring in securing means of education. The beginning work for the blind, in short, brought to it for the most part a group of men possessed of rare qualities, together with a courage and determination that came at an opportune season. Well was it that the education of the blind was to be entrusted to the hands that it was.⁴

The first schools, as we have found, were created by societies of private citizens, the necessary funds for the work being derived from "membership fees" in them, from subscriptions, and from other

¹ xxxvii., 1833, p. 56.

² vi., 1836, p. 252. Schools in the West and Southwest were also particularly advised. *Ibid.*, iv., 1834, p. 579. See also *ibid.*, ii., 1833, p. 577; v., 1835, p. 135; *Ladies' Garland*, Philadelphia, ii., 1839, p. 24; *Universalist and Ladies' Repository*, vi., 1838, p. 321; vii., 1839, p. 430; *Albany Journal and Telegraph*, Dec. 28, 1833; Senate Documents, Massachusetts, 1839, no. 43; George Combe, "Notes on United States of North America," 1841, i., p. 61; iii., p. 185; James Champlin, "Early Biography," 1842, pp. 135, 184; Robert Baird, "Religion in America," 1844, p. 180.

³ xxiv., 1833, p. 175.

⁴ The names of not a few of the early workers are entitled to lasting remembrance and honor: Samuel G. Howe, of Massachusetts; John D. Russ, of New York; Julius R. Friedlander, of Pennsylvania; John S. Plummer, of Virginia; William A. Mawl, of Ohio; James B. Flint, of Kentucky; and others, both their contemporaries and successors.

private donations. To the aid of these schools the States later came with appropriations, the legislatures assuming at the same time a general control and supervision, though the institutions were left as private corporations. With the establishment, however, of the school in Ohio a second stage is reached in the extension of the means of education of the blind. The state now undertakes the task itself, and provides schools at its own initiative and expense. At the beginning admission was restricted to a certain number of pupils, often based upon some political division of the State, such as a senatorial district in New York and Tennessee, or a judicial in Ohio. In the sweeping away of such limitations, we have the third stage in the provision for the instruction of the blind. The fourth and last stage—though not necessarily in this order in any one particular State, and not in every case formally accomplished—is attained, when on the opening of the school in Indiana the regulation which allowed free attendance to “indigent” children only is removed, and instruction is offered without charge to all. In the schools created in later times these several steps were usually merged into one: limitations of whatsoever kind were mostly omitted, and the institutions were in general thrown open to all from the beginning.

The schools for the blind thus in time reached in the state’s regard the position of the regular schools. Private benevolence gave way to public action, and restrictions in the admission of pupils to free education for all. The state had come to realize its full educational duty towards the blind, and their instruction was placed upon the same footing as that of children in the possession of sight.

In the practical measures taken to provide for the education of the blind, the state had to depend, apart from what had been done by the regularly chartered societies, not a little upon the action of private citizens.¹ It was they who in many instances not only called attention to the need, but who also actually began the work of instruction, sometimes even forming special associations for the purpose.² More than once a private school pointed the way for, or perhaps was the nucleus of, the State institution.³

Initial procedure often consisted in the bringing together of such blind children as were within reach, usually but few in number, and the

¹ Where the schools were regularly chartered societies, fees were often fixed at \$5 for members, \$50 for life members, \$100 for benefactors, \$500 for patrons, and corresponding sums for other donors, though the size of the fees varied in different schools. These fees proved of no small assistance in promoting the work.

² This was notably true in the case of the schools in California and Florida. In the latter the organization was called the Association for the Promotion of the Education of the Deaf and the Blind. Action was similar in Virginia.

³ As in Iowa, Georgia, Missouri, Mississippi, Tennessee, Illinois, and Wisconsin.

starting with them of whatever approach to a school was possible. The undertaking was regarded largely as an experimental one; and it was upon the measure of success attending it that appeal for permanent support was to be based. It was hoped that as the results became known the state might be induced to take over the enterprise, and thereafter to provide regular support.¹ Early endorsement of the movement could be counted on from the intelligent and progressive parts of the community; but to secure further interest and wider ratification, there were given exhibitions of pupils before the general public, and finally if opportunity offered before the legislatures.²

In not a few instances pupils were brought in from an already established school in another State, as a demonstration of what had been and could be done; in fact, it sometimes happened, as we have had occasion to note, that the original prompting in the matter came from the founders of such other schools. It was often the earnestness and zeal to spread the work of education of the blind that proved the most effective force in calling new schools into being.³

But through whatever action the foundation of the schools was laid, in order to enlist the support of the public and of the legislatures, there was frequent recourse to the exhibitions of pupils. It was largely by such means, as we have before indicated, that was secured the permanent establishment of the schools. In this way evidence was furnished of the pupils' ability to read, to perform on musical instruments, and to make industrial products. A second object of the exhibitions was to impress parents of blind children, and thus to gather in pupils. Still another motive at times was, if possible, to raise funds to assist in the work, it being hoped at any rate that enough would be forthcoming to defray the costs of the displays. It was not an uncommon occurrence for the exhibitions to be conducted on tours over the State, with visits to a number of counties and cities, and with entertainments perhaps most often given in churches, which were gladly offered for the purpose. To the affairs were generally drawn large crowds, and always delighted ones.⁴

¹ In Iowa suggestion was made that the State school remain as a private corporation. *Encyclopedia Americana*, 1883, ii., p. 559.

² As a further means of stimulating effective concern, visits to the new schools on the part of the public were encouraged, though it was often hardly necessary to extend a formal invitation. The response was generally as spontaneous as it was enthusiastic. At the New York Institute visitors "were delighted with the novelty of the scenes." Report, 1836, p. 5. At the Indiana School there was "grateful satisfaction." Report, 1850, p. 14.

³ As many as fifteen States, including all those in New England, were visited by pupils from the Perkins Institution. Report, 1846, p. 7; 1881, p. 100; M. Anagnos, "Education of Blind," 1882, p. 54. To the exhibitions of these pupils nine schools are directly credited. *Brief Summary of History of Perkins Institution*, 1909.

⁴ In Ohio there were "numerous exhibits before thousands." Report of Ohio School, 1844, p. 8. In North Carolina the exhibits were reported to occur before "vast numbers,"

In some instances the schools were located at or near the State capital, the more thoroughly to convince the legislators of what the blind were capable of accomplishing.¹ Oftentimes, also, memorials or petitions, perhaps containing a great number of names, were presented to the legislatures, praying for the establishment of a school or for the public support of one. In not a few cases strength was lent in the earnest plea of the head of an institution for the deaf, an institution perhaps just brought into being; and here and there action was secured through the insistent efforts of some organization, as a State medical body² or a charitable society.³ Sometimes a citizen of a State where a school had been inaugurated would carry to another the joyful news, and bespeak a like undertaking. Further seed was sown by certain graduates of institutions already in operation, some of whom took a keen interest in the establishment of schools in States still unsupplied.⁴ Now and then it happened that a man, perhaps himself blind, who had been instrumental in the creation of a school in one State would pass on to another and attempt to secure similar results.⁵ Finally, as was an occasional occurrence, if there was doubt as to the wisdom of the proposed course, a point was to be gained in the dispatch, as a preliminary procedure, of a special committee or agent to some existing school in another State, to examine it and to make report upon its work, this report being, as was expected, nearly always a highly favorable one.⁶

and to be received with "warm sympathy." Report of North Carolina School, 1856, p. 20. In Pennsylvania the "audiences were always too large for the exhibition halls or churches." E. E. Allen, "Historical Sketch of Life and Labors of J. R. Friedlander," 1903, p. 6. In this State twenty counties were visited. Report of Pennsylvania Institution, 1844, p. 20. In Ohio exhibitions were also given at the State university. Report of Ohio School, 1843, p. 16. In Kentucky the exhibits "awakened the deepest sympathy." Report of Kentucky School, 1849, p. 10. See also Report of Pennsylvania Institution, 1835, p. 4; Ohio School, 1840, p. 6; Kentucky School, 1844, p. 8; Indiana School, 1849, p. 7; Iowa School, 1855, p. 3; Tennessee School, 1857, p. 8; Maryland School, 1860, p. 20; Arkansas School, 1860, p. 15; 1882, p. 36; History of Illinois School, 1893, p. 16; Proceedings of American Association of Instructors of Blind, 1878, p. 7; Journal of House of Representatives of Pennsylvania, 1834, p. 187; Journal of Senate of Mississippi, 1854, p. 299; Journal of House of Representatives of Arkansas, 1866, p. 178; Journal of House of Representatives of Iowa, 1853, p. 99; Journal of Senate of Pennsylvania, 1833, pp. 190, 194, 208, 209; *American Journal of Science and Arts*, xxiv., 1833, p. 175; *Stethoscope and Virginia Medical Gazette*, iii., 1853, p. 167; *New York Observer*, May 21, 1836; *Salem (Massachusetts) Mercury*, May 18, 1836; *National Intelligencer*, Washington, Jan. 10, 1837.

¹ See Message of Governor of Arkansas, 1868, p. 13.

² As in Ohio.

³ As in Utah.

⁴ Ten schools were assisted in their organization by such graduates. Report of United States Commissioner of Education, 1883, p. cxvii. Nine schools are said to have been initiated by blind graduates of existing schools. *Encyclopedia Americana*, 1883, ii., p. 560.

⁵ The schools in Illinois, Iowa, and Nebraska were all started by the same person. See History of Illinois School, 1893, p. 12; Report of Missouri School, 1889, p. 15; Proceedings of American Association of Instructors of Blind, 1932, p. 658.

⁶ On efforts to secure schools and the manner of their opening, see *Hazard's Register of Pennsylvania*, xi., 1833, p. 57; *Southern Literary Messenger*, i., 1835, pp. 134, 201; *Men-*

But, as we have seen, appeals to the legislatures of whatever kind, especially if accompanied by a presentation of the condition of the blind without education and of the blessings to be conferred by it, were

tor, i., 1891, pp. 115, 209; ii., 1892, p. 88; iv., 1894, p. 150; *National Magazine*, x., 1857, p. 419; *Teachers Advocate*, i., 1846, p. 568; *Mother's Journal and Family Visitant*, xvii., 1852, p. 265; *Gleason's Pictorial Drawing Room Companion*, vii., 1854, p. 216; *Old and New*, xi., 1875, p. 224; *Harper's Magazine*, xlviii., 1874, pp. 735, 887; *New England Magazine*, iv., 1833, p. 177; *School Life*, x., 1924, p. 47; *Social Service Review*, i., 1927, p. 291; *California News (California School)*, May 23, 1903; *Outlook for Blind*, xxvi., 1932, p. 73; *Illinois Medical Journal*, xxvi., 1914, p. 187; xxxvi., 1919, p. 118; *Nashville Journal of Medicine*, xiv., 1854, p. 244; *Boston Medical and Surgical Journal*, vii., 1832, p. 387; viii., 1836, p. 3; xii., 1835, pp. 19, 306; xvii., 1837, p. 176; xxxii., 1845, p. 208; *Western Journal of Medicine and Surgery*, v., 1842, pp. 240, 317; vii., 1843, p. 77; *American Journal of Science and Arts*, xxiv., 1833, p. 175; New York Institute, "At End of First Century," 1932; Report of New York Institute, 1924, p. 26; 1931, p. 31; Perkins Institution, 1926, p. 23; Utah School, 1892, p. 8; 1895, p. 8; Ohio School, 1839, p. 6; 1847, p. 10; 1856, p. 14; 1876, p. 37; 1880, appendix (3rd reunion of former pupils); 1885 (4th reunion), appendix; 1893, p. 141 (5th reunion, 1890); Kentucky School, 1848, p. 12; 1882, p. 8; 1891, p. 7; Illinois School, 1866, p. 14; Arkansas School, 1878, p. 47; Georgia School, 1863, p. 12; Louisiana School, 1873, p. 58 (Address of W. H. Goodale, in *New Orleans Picayune*, June 23, 1873); Wisconsin School, 1874, p. 9; Texas School, 1878, p. 21; Virginia School, 1869, p. 6; North Carolina School, 1892, p. 5; Report to Contributors of Pennsylvania Institution, and Address to Public, 1834; Report of Trustees Appointed to Collect Information Relative to Education of Blind, Ohio, 1836; Constitution, Charter, By-Laws, and Documents Relating to Pennsylvania Institution, 1837; Proceedings of Reunion of Officers and Pupils of Ohio School, 1860, p. 6; History of California School, 1893, p. 3; History of Illinois School, 1893; Proceedings of Association for Education of Blind, 1833; American Yearbook, 1862; Missouri School, "Story of Blind," 1901; Proceedings of 25th Anniversary of Western Pennsylvania Institution, 1915, pp. 14, 59; *New York Institution for Blind v. How's Executors*, 10 N. Y., 84 (1854); *People ex rel. New York Institution for Blind v. Fitch*, 154 N. Y., 14, 47 N. E., 983 (1897); Report of New York State Board of Charities, 1897, p. 101; Report of Massachusetts Board of Charity, 1867, p. 104; Bulletin of Iowa Institutions, ii., 1900, p. 453; Laws of Maine, 1834, p. 665; Journal of House of Representatives of Arkansas, 1867, p. 51; Journal of Senate of Louisiana, 1853, p. 5; Journal of House of Representatives of Oregon, 1876, pp. 45, 63; Journal of Senate of Virginia, 1840, p. 29; 1843, p. 24; Journal of Senate of Georgia, 1853, p. 29; Journal of Assembly of Wisconsin, 1856, p. 36; Journal of House of Representatives of Texas, 1859, p. 37; Journal of House of Representatives of Tennessee, 1853, p. 42; Journal of House of Delegates of Virginia, 1840, p. 14; Journal of Assembly of New York, 1835, p. 15; 1839, p. 14; 1840, p. 14; 1843, p. 30; 1844, p. 25; 1845, p. 35; 1846, p. 42; 1849, p. 16; Journal of House of Representatives of Mississippi, 1848, p. 23; 1857, p. 20; Journal of Senate of Mississippi, 1851, p. 20; Journal of Senate of Indiana, 1844, p. 24; Journal of Senate of New Hampshire, 1835, p. 13; 1836, p. 38; Message of Governor of Michigan, 1856, p. 7; Message of Governor of Ohio, 1836, p. 6; 1837, p. 22; 1838, p. 16; 1839, p. 26; 1840, p. 34; 1841, p. 10; Message of Governor of Oregon, 1880, p. 16; Address to Benevolent Citizens of Chester County (Pennsylvania), 1833; *Encyclopedia Americana*, 1883, ii., p. 556; Report of United States Commissioner of Education, 1880, p. clxxv.; Report of Superintendent of Public Schools of Tennessee, 1875, p. 217; Report of Boston School Committee, 1862, p. 6; Proceedings of American Association of Instructors of Blind, 1926, p. 290; 1932, *passim*; Brief Memoir of William Chapin, 1875; "First Century of National Existence," 1874, p. 439; Early Biography of James Chaplin, 1842, p. 12; Ohio School, Report on Benevolent Institutions of Great Britain and Paris, 1846; R. S. French, "From Homer to Helen Keller," 1932, p. 109; Report of Commissioners on Proposals for Sites and Plans for Buildings for Deaf and Dumb, Blind, and Feeble-minded, New Jersey, 1875; Report of Commissioners in Charge of Deaf and Dumb and Blind Asylum, New Mexico, 1894; J. P. Wickersham, "History of Education in Pennsylvania," 1886, p. 444; W. G. Clark, "Education in Alabama," 1889, p. 52; C. R. Aurner, "History of Education in Iowa," 1920, v., p. 1; C. E. Jones, "Education in Georgia," 1889, p. 136; C. L. Coon, "Beginnings of Public Education in North Carolina," 1908, i., p. 379; A. R. Whitehill, "History of Education in West Virginia," 1902, p. 109. See also reports of schools for the blind in general.

rarely turned away, and usually secured prompt response.¹ In more than one State the Governor warmly espoused the new cause, and became a strong supporter of the project.² When the desired action relating to the education of the blind was finally to be obtained, the measure was passed with few dissenting votes, sometimes with none at all. If it did not appear advisable for an institution to be created in a particular State at once, a temporary expedient was to be availed of in the sending of blind children at public expense to a school in another State, an arrangement to last till one in its own borders could be brought into being. In some cases steps were taken by the legislatures of territories before statehood had been conferred upon them.

In a great many ways the action taken for the creation of schools for the blind was similar to that taken with respect to schools for the deaf, which may be said to have set the precedent for institutions for the special classes. In most States schools for the deaf were created before schools for the blind, this being because the number of children of the one class was considerably in excess of that of the other, and consequently received prior attention. In but eight States did schools for the blind precede schools for the deaf—Arkansas, Iowa, Massachusetts,³ Maryland, Mississippi, Tennessee, Texas, and Wisconsin.⁴

¹ "Provision for the education of the blind was made in those States before the representatives of the people had time to wipe away the tears from their eyes." M. Anagnos, "Education of the Blind," 1882, p. 54; Report of Perkins Institution, 1881, p. 103. The action of the New England States in providing for their blind children at the school in Massachusetts is thus spoken of: "The readiness, and alacrity even, with which these States respond to the call in behalf of the blind is one of the most pleasing signs of the times. Whenever the subject has been brought before the legislature of any State, and an appropriation asked for, it has been granted at once, without difficulty. Men of all parties and of all sects unite cordially; and forgetful even of habitual parsimony, they ask only how much is really needed, and give it with a blessing." *Ibid.*, 1849, p. 4. The legislature of Pennsylvania is said to have granted a charter and allowed an appropriation for the school in that State "with unparalleled promptitude and unanimity." Report of Pennsylvania Institution, 1834, p. 5.

² "The blind are another class of persons upon whom misfortune has laid a heavy hand, and who have a just claim to something more substantial than bare sympathy. Books have recently been made with embossed letters, whereby they are enabled, after a proper course of instruction, to read with considerable facility. By this ingenious contrivance a new avenue is opened to their minds, and ampler means of knowledge brought within their reach. The number of persons suffering under the deprivation of sight in this State cannot be accurately estimated; but it is very considerable—sufficiently so at least to make their condition a subject worthy of your attention and kind regard." Journal of Assembly of New York, 1834, p. 16. See also Message of Governor of New York, 1867, p. 15; Report of Oregon Board of Charities and Correction, 1892, p. 282; Journal of Senate of Delaware, 1835, p. 13; Journal of Senate of Georgia, 1854, p. 29; 1855, p. 35.

³ The school for the blind in Massachusetts was intended to answer for the blind of the New England States, just as the school for the deaf in Connecticut, established some years sooner, was intended to answer for the deaf of this section.

⁴ In Missouri schools for both classes were opened the same year. In West Virginia the deaf were added to the provisions of the bill creating a school for the blind. In Tennessee the school for the deaf was included in an amendment to a law creating a school for the blind. On the establishment of the early schools for the deaf, see Harry Best, "The Deaf:

As a usual thing on the creation of a school for the blind the same provisions were adopted which applied to the school for the deaf. In certain cases departments or classes for the blind were established in already existing institutions for the deaf, and in other cases the schools were created to receive both classes. This was done chiefly for the reason that the arrangement appeared to be the most economical one, there being so few children of either class at the start, and the deaf usually outnumbering the blind.¹ It was also true that the public and the legislatures, as well as the promoters themselves sometimes, so much taken with the idea of educating the two classes, could hardly be expected fully to discern the lines that actually separated the two in their respective educational needs and methods.²

In this work of creating schools for the blind, no inconsiderable debt is found to be owed to private action. It was private initiative that often brought the schools into being, and private exertions that often won for them their endorsement or adoption by the state. Few were the communities, as we have discovered, where there were not a sufficient number of citizens prepared to lend substantial aid to the enterprise.³ For some of the schools, money not only was subscribed, but it came also from the proceeds of fairs and other entertainments,

Their Position in Society and Provisions for Their Education in United States," 1914, p. 154. See also *American Journal of Sociology*, xxxv., 1930, p. 631.

¹ See Journal of Senate of West Virginia, 1868, p. 19; Journal of Senate of Nebraska, 1868, p. 18; *Western Journal of Medicine and Surgery*, vii., 1847, p. 36.

² On the union of the blind and the deaf in one school, see Chapter XXIII. There were, however, early protests against the policy. See Report of Michigan School, 1855, p. 1; 1856, p. 27; 1858, p. 46; 1872, p. 146; North Carolina School, 1857, p. 17; Louisiana School, 1870, pp. 15, 30; 1871, p. 10; 1873, p. 31; Minnesota School for Deaf, 1866, p. 5; Alabama School for Deaf, 1868, p. 5; 1871, p. 12; New York State School, 1866, p. 51. On the other hand, now and then the advantages of the arrangement were pointed out, especially from mutual stimulation of the two classes when in contact or association. See *Southern Literary Messenger*, x., 1844, p. 30; Report of California School, 1869, p. 15; 1873, p. 18. It is interesting to note that at the Perkins Institution the question was considered of the creation of a department for the deaf; and it seems that for a time a few of them actually received admittance. See Report of Perkins Institution, 1844, p. 22; *American Annals of Deaf*, i., 1847, p. 107; Report of Massachusetts Board of Charity, 1864, p. 71; 1867, p. lxix. A few deaf children were also received at the school in Oklahoma at first. Message of Governor of Oklahoma, 1899, p. 16. On comparison of the beginning work for the blind and for the deaf, see E. E. Allen, "Education of Defectives," 1900, p. 3. In certain of the early schools for the deaf and the blind departments for the feeble-minded were maintained for a longer or shorter time, as in Illinois, Minnesota, and Montana. In one or two instances the insane were provided for under the same management at the beginning, as in Michigan. In Ohio a committee was appointed to consider "the erection and location of a public asylum for the reception of lunatics and the instruction of the blind." Report of Ohio School, 1856, p. 15.

³ In some cases subscribers were numerous. Assistance was usually continued till the schools were well on their feet, and sometimes this was renewed when they later fell into sore straits, now and then the promoters even pledging themselves for support. On appeals for aid, see "Address to Citizens of City and County of St. Louis in behalf of Missouri Institution for Education of Blind Children," 1851. On the assistance from all classes, see Report of Kentucky School, 1848, p. 13. A single fair or tea sometimes netted as much as \$500.

while exhibits of pupils seldom failed to draw generous offerings. Contributions were tendered not only by various individuals, but also by churches and other organizations. In a small number of cases funds were collected from citizens with which to purchase a site for the school, and in other cases the land required was given by the cities themselves.¹ Indirect aid of not a few kinds was extended as well; and in the early days there was little difficulty in getting reduced transportation on railroads or steamboats.

In the aggregate, however, private assistance to the schools did not prove great; and in but a few instances was it of considerable extent. As a rule in most cases it was limited, usually sufficing only to tide the school over its nascent stage, and in large part ceasing upon its full establishment. From this time on the maintenance of the institutions was assumed practically entirely as a public charge, the legislatures of the several States undertaking to provide directly for them.² At a much later period we find public aid of a different kind granted to certain institutions, this being done by the National Government when, on the admission into the Union of some half dozen States in the West, extensive tracts of the public domain were set aside for the benefit of the schools to be established in them.³

When provision for the education of the blind had been formally resolved upon by the state, its first act of assistance, especially in the case of the earlier schools, was in the form of *per capita* allowances for the pupils, with only occasionally a specific appropriation. These allowances were in the beginning small, but in time were gradually increased. It was usually some years before the policy was adopted of making regular appropriations. Even where appropriations in the

¹ See Proceedings of Association to Establish School for Education of Blind, Pennsylvania, 1833.

² In several States, as North Carolina and Utah, there were allowances also from the counties. In the former State these were \$75 for each pupil. In Maryland there were grants from the city of Baltimore; and in several other cases there was assistance from cities at the beginning.

³ In this connection it may be noted that schools for the blind were not the recipients in the first days of their work of donations of land from the Federal Government as were the schools for the deaf in Connecticut and Kentucky. The Perkins Institution, the New York Institute, and the Pennsylvania Institution all asked Congress for land, as did several schools in the South and West. Exhibitions of pupils were even given before Congress by the three schools named in the hope of enlisting its sympathy. At one time also a request was made for a part of the Smithsonian fund to aid the schools. A bill bestowing land upon schools for the blind, the deaf, and the insane passed one of the Houses of Congress in 1852. One purpose of the organization of the American Association of Instructors of the Blind in 1853 was to request the granting of land from Congress. See Report of New York Institute, 1844, p. 5; 1845, p. 21; 1846, p. 18; Perkins Institution, 1853, p. 29; Wisconsin School, 1852, p. 7; Proceedings of American Association of Instructors of Blind, 1853, p. 5; *National Intelligencer*, Washington, July 9, 1842; 45th Cong., 3rd sess., Senate report no. 622, 1879. In Arkansas 100 sections of land were asked for. *Journal of Senate*, 1868, p. 674. In 1851 the State of Vermont asked for 10,000 acres of land for the benefit of a hospital for the insane and for the education of the blind and the deaf. Laws, 1851, no. 81.

lump were instituted from the start, these were often, owing to the lack of wealth in some of the States, meagre to begin with; and were only made larger in the course of the years. In a few States, as Illinois, Indiana, and Wisconsin, when it was decided to create a State institution, the first proceedings were, in lieu of, or in addition to, a direct appropriation, the levying of a small mill tax upon the assessed property valuation of the State.¹ Now and then a favor or consideration was extended to the school of some special kind.² In some cases, in order to stimulate private benevolence and to increase the resources of the school, appropriations were made on the condition that a given sum be secured from private means.³ Not infrequently the schools were located where there appeared to be the greatest financial inducement, as with the requirement that a certain number of acres of land should be donated for their sites.⁴

For the regular organization of the new schools, a small body of citizens, usually the original promoters, was appointed to act as trustees, to whom was confided their direction, often with power to choose the seat of their operations and to make the necessary arrangements for their conduct.⁵ Over them the legislature maintained a general supervision, with special committees to look after them.⁶

¹ In Illinois a tax of $\frac{1}{10}$ of a mill on each \$100 of assessed property valuation was levied in 1851, lasting for four years, and netting the school \$99,000. In Indiana in 1842 a two-mill tax was levied for the benefit of pupils sent to Ohio and Kentucky; and in 1846 a one-cent tax for the school, and in 1851 a tax of $\frac{1}{5}$ cents, for one year. In Wisconsin there was a tax of $\frac{1}{15}$ of a mill at first. In North Carolina a tax of 9 cents on \$100 was levied in 1876. In Oklahoma a tax of $\frac{1}{10}$ mill was levied in 1899. On suggestions at the constitutional convention in Iowa in 1857 for the raising of funds, see C. R. Aurner, "History of Education in Iowa," 1914, i., p. 201.

² In several States funds were authorized for a time from the sale of public land. In Arkansas at one time, when no other funds were to be had, an appropriation was made from the Seminary and School funds. American Yearbook and Repository, 1869, p. 283. In North Carolina the first appropriations came from the "literary fund" of the State. In Kentucky, in 1844, just after the establishment of the school, a small railway, known as the Louisville & Portland Railroad, was organized, largely for its benefit, the trustees of one being practically those of the other. The railroad was chartered for a period of 30 years, with a capital stock of \$100,000. The State granted the right of way, and subscribed to the stock, allowing \$10,000 of the stock of the State bank held by the State board of education. In case of failure, the property was to revert to the State, to be held in trust for the school. There proved to be many difficulties in the way of the undertaking, and but little was realized from it for the school. The charter of the railroad was eventually sold for \$600. See Report of Kentucky School, 1849, p. 7.

³ Thus the State of Pennsylvania made its first appropriation of \$20,000 on condition that \$25,000 be raised from private funds. In New York \$12,000 was granted in 1836 on condition that a practically equivalent sum be thus secured; \$10,000 in 1839; and \$7000 in 1841. In Missouri the first appropriation, consisting of \$15,000 was made on condition that \$10,000 be raised. See Report of Missouri School, 1889, p. 15. See also *Western Journal of Medicine and Surgery*, v., 1842, p. 237.

⁴ In Nebraska \$3000 was required for a site. *Journal of Senate of Nebraska*, 1877, p. 95.

⁵ In Tennessee the first board of trustees consisted of three clergymen; and in Washington, of a physician, a lawyer, and a "practical educator." In Kentucky the first board

⁶ According to the Act establishing the school in Kentucky, it is "in all things and at all times subject to the control of the legislature."

On their material side, few of the schools could start out in encouraging circumstances. The resources available for their proceedings, while reflecting most creditably upon the generosity of sparsely settled communities, could not be expected to be of very great extent; and the schools had to carry on their work with whatever facilities they were able to find at hand. The quarters secured for their activities were hardly likely to be pretentious, and were usually modest in the extreme. Many schools began in a single rented room, a few in a church lent for the occasion, and one or two in the home of a devoted teacher. It was only in the course of the years, as the States grew in population and in wealth, that the establishments for the blind took on appearances in keeping with their character.

The schools for the blind were now in being, and were ready to take up their appointed tasks. But a new and unexpected problem was found to await them. This was to secure pupils whom they could educate. Though in nearly every community where an institution was established, there were a greater or less number of blind children, it was discovered to be a far from easy matter to get them in. The purposes of the schools were little understood, while very frequently the parents themselves, despite the promised benefit, proved unwilling to part with their afflicted offspring.¹ Besides, in many sections the country was new, the roads bad, and the facilities of communication scant.²

was the local board of education; and in Florida, the State board of education. In Oregon the State board of education or State officials constituted the first boards; and in Montana and New Mexico, State officials. In Delaware the education of the blind was for a long time in the hands of the Justices of the Superior Court. In Minnesota at the beginning the Governor of the State, the Lieutenant-Governor, and the Judges of the Supreme Court were made visitors *ex-officio* of the school. In Oklahoma, Utah, and Texas the schools were for a time connected with the State university. In certain schools there were committees of lady visitors for a longer or shorter time, as in those of Kentucky and Missouri and in the Pennsylvania Institution. In some cases the boards had direction of other classes as well, especially the deaf.

¹ Another difficulty lay in the securing of qualified teachers. See Journal of House of Commons of North Carolina, 1846, p. 277.

² Says an early report: "It is very natural to suppose that as soon as an institution is opened, pupils will flock to it, eager to avail themselves of its proffered benefits; but the experience of all who have preceded us in this enterprise goes to show that something more is left to be done. . . . We must first visit their homes prepared to show them and their incredulous friends that they are susceptible of education." Report of Indiana School, 1848, p. 10. "The blind are reluctant to leave home, and the parents of the blind are slow to believe that they can be instructed." Report of Missouri School, 1853, p. 6. On the difficulties of getting blind children into the schools, see also Report of Kentucky School, 1847, p. 7; 1855, p. 8; 1886, p. 7; 1887, p. 7; Indiana School, 1850, p. 17; Ohio School, 1844, p. 9; Illinois School, 1857, p. 11; Georgia School, 1853, p. 4; Wisconsin School, 1864, p. 5; 1859, p. 24; 1876, p. 14; 1885, p. 4; Louisiana School, 1870, p. 7; 1879, p. 18; North Carolina School, 1852, p. 4; 1860, p. 9; Missouri School, 1856, p. 18; Arkansas School, 1882, p. 10; Maryland School, 1883, p. 9; West Virginia School, 1890, p. 14. On the other hand, it has been asserted that it did not prove difficult to bring pupils in. Report of Louisiana School, 1855, p. 11.

Thus the schools on the opening of their doors had very few pupils to begin with. Seldom did the total number in a single one exceed half a dozen.¹ But if the pupils were slow in availing themselves of the privileges of education placed before them, the schools were determined not to be content with the mere extending of an invitation, but to do something more. They proceeded to go out and seek pupils, and if possible to compel them to come in.² It was found that they already had certain provisions of the law to aid them. Oftentimes it was the case in the course of the founding of the school that before any direct action was attempted, an enumeration was directed of the blind of the State, perhaps together with other classes. In some States it was also made the duty of certain local officers, as county clerks, assessors, tax commissioners, selectmen, and others, to register and report prospective pupils—though it is to be said that on the whole this task was but ill performed.³ From whatever sources the names of possible pupils could be secured, to whom information might be sent or upon whom visits might be made, efforts of all kinds were put forth to reach them. By many of the schools circulars were distributed through the hands of postmasters, tax-collectors, ministers, school teachers, and other persons whose help might be enlisted; ⁴ while by a few of the schools the newspapers were availed of to carry their advertisements, or to answer inquiries. In a considerable number of cases special agents were sent out to scour the State and gather in pupils; while it may almost be said to have been the customary practice of the superintendents of the schools to make tours, often accompanied by pupils, the exhibitions of whom, already referred to, did much both to awaken attention and to show the benefits to be obtained through education.⁵

¹ The number at the beginning in the Perkins Institution and the Virginia School was 6; in the Ohio and Kentucky schools, 5; in the Pennsylvania Institution and the Illinois School, 4; and in the New York Institute and the Iowa School, 3. In the Texas School there was not a pupil for the first month, though 7 came during the year. On this subject, see *Proceedings of American Association of Instructors of Blind*, 1874, p. 5.

² Blind children in numerous instances were in a general state of neglect. Not infrequently some were to be found in almshouses, or possibly in some other unsuitable institution.

³ See Report of Kentucky School, 1850, p. 4.

⁴ See Report of Michigan School, 1874, p. 43. In Ohio some 2000 circulars were sent out.

⁵ On the success of these exhibitions, see Report of Indiana School, 1849, pp. 7, 12; 1850, p. 10; Kentucky School, 1849, p. 3. In Missouri an agent of the school "entered into an exploration of that part of the State north of the Missouri River," finding twenty-five blind children, ten of whom he "induced" to enter. Report of Missouri School, 1860, p. 3. In Iowa the members of the State legislature were urged to visit the blind in their respective districts and to persuade them to come to the school. Report of Iowa School, 1856, p. 6. In Georgia the sheriffs of the several counties, as well as the grand juries, were appealed to for help. Report of Georgia School, 1859, p. 16; 1860, p. 12. On efforts to bring in pupils, see also New York Institution for Blind, *Brief Account of Its Organization, Character, and Privileges*, 1843; Report of Superintendent of Public Schools of Tennessee, 1875, p. 218; Report of New York Institute, 1856, p. 17; Kentucky School, 1842, p. 3; 1847, p. 7; 1848, p. 8; Ohio School, 1862, p. 7; 1885, p. 55; Minnesota School,

In some States, on the other hand, certain terms of admission, of more or less formal character, were laid down—although on the whole there was little intention or effort to live up to them—and it was usually some years before the greater part of them were done away with.¹ In a large portion of the schools the pupils were individually appointed, or were “committed,” as it was called.² In some, as we have previously noted, restrictions were placed upon the number of pupils to be admitted, especially as to the number from a designated political division of the State.³ With the earliest established schools, as we have also observed, charges were often at the beginning prescribed for children who were able to make payment, later to be reduced, and finally to be abolished—though there was rarely in any case serious effort to collect them.⁴

In most of the schools in their first days the period of attendance to be allowed to pupils was very short, often being but three or four years, and now and then only two. Usually, however, after a time one or two years were added to the number permitted, which procedure was repeated after certain intervals, and the length of residence was thus gradually increased. In few of the States, moreover, was an early age insisted upon. In fact, in a considerable part of them pupils were not admitted at an early age, the limit at which they might be received not infrequently being ten or twelve years of age. The limit to which they

1867, p. 54; Louisiana School, 1870, p. 19; Arkansas School, 1870, p. 27; Maryland School, 1877, p. 5; *Western Journal of Medicine and Surgery*, iii., 1845, p. 274.

¹ As to requirements of admission, see *Rhode Island Educational Magazine*, i., 1852, p. 145. In many of the schools there was, and still is, a formal requirement of good character. In the New York State School preference was at first to be given to the children of United States war veterans. It may be noted also that sometimes at the first brighter children were chiefly desired—“in large part for the reason that, the schools being experimental, it was necessary that they prove successful if legislative support was to be permanent.” E. E. Allen, *op. cit.*, p. 21.

² In some of the States the pupils were long known as “beneficiaries.” The power of appointment was not infrequently vested in the Governor of the State, to whom application also had usually to be made.

³ In New York in 1834 there were allowed 4 pupils from each senatorial district of the State; in 1836, 4 more; in 1839, 8 more; in 1852, 4 more; and in 1855, all the indigent. In Kentucky if there were more pupils than there were accommodations for, they were to be apportioned among the several counties—a measure still on the statute books. In Maryland before the establishment of a school the law authorized the education of but 10 pupils in one year, and for a time after the establishment, of but 20.

⁴ For the indigent a formal declaration has sometimes still to be made, as we are later to see. In the case of the Perkins Institution there was at first a formal charge of \$160, which after a time was raised to \$200. See Report, 1849, p. 4. In Ohio the tuition fee was in 1838 placed at \$120, 12 indigent children receiving free admittance each year, or 60 in all at one time; in 1843 the trustees were given discretion, admitting as many as they thought suitable; and in 1851 all the blind children of the State were admitted without cost. On objections to the imposition of charges for any pupils, see Report of Wisconsin School, 1858, p. 30; 1859, p. 23; 1866, pp. 7, 18; Iowa School, 1854, pp. 4, 7; Louisiana School, 1861, p. 7; Missouri School, 1874, p. 12. For suggestions that charges be imposed upon those able to pay, see Report of Committee of Medical Convention on Subject of Public School for Education of Blind, Ohio, 1835.

might remain was correspondingly high, in some cases pupils being allowed to enter up to their thirtieth year.¹ These restrictions as to age were also lowered in the course of time. In both matters, however, considerable discretion was conferred upon, or was assumed by, the directors from the beginning. Thus eventually we find the ages of attendance as well as the general rules and regulations of admission conforming more and more to those of the regular schools.

The various schools that have been created in the United States for the education of the blind have as a general thing been residential institutions, in which the pupils have remained the entire scholastic year.² Since the beginning of the twentieth century a certain number of day schools have been established, more on the order of the regular common schools, and more distinctly an integral part of the state's education economy. Their operations are mainly confined to the larger cities.

For the great number of the blind affected by special schools the institutions have remained the one means of education. These have been created in most of the States of the Union. In those without them blind children are sent to a school in a neighboring State. The schools are as a rule supported entirely from the public treasury, and are controlled by the legislatures, the actual administration being delegated to special boards of trustees or similar bodies. In half the States regard of an enduring kind has been manifested for the schools, in that provision for them has been included in their Constitutions, so that these States are committed to their maintenance.³

We have now traced the origin and development of the schools for the blind in the United States. We are next to examine in greater detail their organization, together with the general provisions that are made for instruction.

¹ In a few instances even adults were enrolled in the schools, this being especially the case when industrial training or opportunities were to be afforded, or even when no other recourse was to be had, and something in the way of a "home" was necessary. On the age period of attendance, see Report of Indiana School, 1851, p. 16; New York Institute, 1851, p. 14; Pennsylvania Institution, 1853, p. 18; Illinois School, 1860, p. 8; New York State School, 1870, p. 11; Report of United States Commissioner of Education, 1880, p. clxxvi.

² In most cases the schools have had continuous existence. In some of the Southern States there was suspension during part of the Civil War. In Michigan the school was closed for one or two years shortly after opening. Report of Michigan School, 1864, p. 10. In Oregon the school was closed from 1879 to 1883. Message of Governor of Oregon, 1880, p. 16; Report of United States Commissioner of Education, 1880, p. clxxv.; *Mentor*, i., 1891, p. 67.

³ Frequently in the Messages of the Governors of the several States the schools are spoken of in terms of affectionate pride.

CHAPTER XXIII

GENERAL PROVISIONS IN RESPECT TO PUBLIC INSTITUTIONS FOR BLIND

GENERAL ARRANGEMENTS IN DIFFERENT STATES

Most States have institutions, or residential schools, within their borders for the education of blind children. In nine States such children are sent to schools outside: Delaware, District of Columbia, Maine, Nevada, New Hampshire, New Jersey, Rhode Island, Vermont, and Wyoming. In each of the remaining States there is at least one institution, or forty-seven in all. In New York and Pennsylvania each there are two.¹ In the Southern States there are usually separate departments in the institutions for children of the colored race.² In Louisiana, Virginia, and West Virginia there is one institution for the white blind and deaf, and one for the colored. In Alabama, Maryland, Oklahoma, and Texas each there is a school for the white blind and a joint school for the colored blind and deaf.³ In nearly all the States the institutions are public institutions, owned by the State and supported by taxation, and under the direct control and supervision of the legislatures.⁴

SEMI-PUBLIC INSTITUTIONS

Certain of the institutions, all in the East, are "semi-public" or "quasi-public" institutions. These are in private hands, operate under the immediate direction of societies organized for the purpose, and are supported to a greater or less extent by endowment funds, but

¹ The institutions in each of these States are in opposite parts of the State. On the creation of a second one, an industrial establishment was proposed instead. See Assembly Journal of New York, 1868, p. 22.

² The first State to make special provision for the colored was North Carolina in 1868. See Report of North Carolina School, 1869, p. 13; 1871, p. 15. On the education of the colored, see Report of Maryland School, 1875, p. 25; 1876, p. 38; Arkansas School, 1888, p. 45; Georgia School, 1880, p. 19; Louisiana School, 1916, p. 33; Proceedings of American Association of Instructors of Blind, 1880, p. 51; Message of Governor of Louisiana, 1908, p. 78.

³ In North Carolina there is a department at the school for the blind for both the colored blind and deaf. In Oklahoma orphan children are also received, and in Texas orphan, delinquent, and feeble-minded children. In Mississippi colored blind children are placed in a private institution of somewhat similar character.

⁴ On the location of schools, see *In re Senate Resolution Relating to State Institutions*, 9 Col., 626, 21 Pac., 472 (1886); Message of Governor of Oklahoma, 1913, p. 100. In a few States, as Georgia, Montana, Virginia, and West Virginia, persons connected with the institutions are exempt from jury service, road duty, or other civic obligation.

at the same time receiving appropriations from the State and subject to its general authority and oversight. Such institutions, six in number, are found in five States: Connecticut, Maryland, Massachusetts, New York,¹ and Pennsylvania. Here the schools have remained private corporations from the time that they were established, some of them being, as we have seen, the first schools to be created for the blind. They were usually the recipients of considerable gifts from private sources at their beginning, and continued to be supported by private funds till the state came to their aid with regular appropriations. All of these institutions are in the hands of societies organized and chartered under the laws of the state. Membership in the societies is as a rule open to persons who are interested on the payment of the prescribed dues or fees.² Assistance from the state to them now is usually in the form of *per capita* allowances for the pupils received, while there may be occasional appropriations for buildings or other equipment.³

For support these schools have thus to depend upon their endowment funds, supplemented by subsidies from the state;⁴ and hence it may be said that the semi-public institutions are providing for the cost of the education of the blind, to which the state but lends assistance.⁵ In this plan there are presented two matters which may seem of public moment. The first is that in respect to the education of certain of the children of the state, a recognized public duty is turned over to a private organization. In its practical bearings, however, this question assumes little real importance. It is merely an instance of the state contracting out for certain services which can in this way be better and more economically performed. The second matter is that of the granting of public money to private institutions. Though the question has received more or less attention on general lines, its application to schools for the blind is not likely to meet with serious consideration.

¹ One school in New York is a strictly State institution. The school in Maryland is now practically a State institution.

² These fees and dues are of varying size. Annual dues are often \$5, but may be as high as \$25. Life membership fees range from \$100 or less to \$500. There are corresponding fees for patrons, vice-presidents, and others.

³ Property may revert to the State if alienated to another use. On the status of semi-public institutions, see Report of Wisconsin School, 1866, p. 21; Proceedings of National Conference of Charities and Correction, 1883, p. 416.

⁴ In Massachusetts the kindergarten of the Perkins Institution is dependent for support entirely on its endowment funds.

⁵ Of the Pennsylvania Institution it is said: "At no time has the State paid more than two-thirds of its cost." Proceedings of American Association of Workers for Blind, 1911, p. 13; see also Report of Pennsylvania Institution, 1880, p. 7; 1924, p. 14. School districts in this State have been asked to make up the difference, some of which have complied. See *ibid.*, 1924, p. 14. Of the Perkins Institution in Massachusetts, it is stated that it "costs the school twice as much to educate and support pupils as the State pays." Report, 1911, p. 32. See also *ibid.*, 1916, p. 19; 1920, p. 25; 1922, p. 14; Brief Summary of History of Perkins Institution, 1909.

These schools have merely stood in the place of the state, doing only what it should have directly done.¹

"DUAL SCHOOLS"

In some cases there are provided "dual schools," or schools in which there are departments for both the blind and the deaf. These are found in eight of the States: Colorado, Florida, Idaho, Montana, South Carolina, Utah, Virginia, and West Virginia. In a number of other Commonwealths the blind and the deaf were educated together for a greater or less length of time, as we have seen—either the two classes being provided for jointly from the first or a department for the blind being later created in the school for the deaf. In the course of time in these States the two classes have been separated, and distinct schools for the blind have been set up.

As a general thing, this union of the blind with the deaf has been regarded as an unfortunate policy. It has been declared: "They have nothing in common in the matter of education, and the bringing of the two classes together is a prolific source of friction and compromise."² Against the arrangement educators of both classes have protested, though the strongest opposition has come from those concerned with the instruction of the blind. In a dual school it almost necessarily results that injustice is done to the blind. Even though unintentionally, they are found to be discriminated against. The blind are always in a minority, and are often considered as only a department or a class in an institution designed primarily for the deaf. Consequently, they are likely to receive less attention and care than is their due, and their interests are not infrequently neglected.³

¹ On this question, see Report of Superintendent of Charities of District of Columbia, 1891, p. 11; *American Journal of Sociology*, vii., 1901, p. 359.

² Report of Colorado School, 1908, p. 20; Report of Colorado Board of Charities, 1908, p. 125. The plan has also been characterized as "mentally and physically depressing." Proceedings of National Conference of Charities and Correction, 1882, p. 211.

³ At one of the earliest conventions of the American Association of Instructors of the Blind, the following was enunciated: "(1) Deaf-mutes and the blind differ from each other even more widely than either class differs from those having all their senses; these differences, constitutional or incidental, are such that they cannot be intimately associated without unpleasant results; (2) the modes of instruction peculiar to each are entirely unlike and incompatible; (3) when both classes are instructed together, the mutes being usually more numerous than the blind, are likely to engross a still larger proportionate share of the attention of the officers; (4) the experience of the institutions for both classes shows that, while the department for mutes prospers and its inmates increase with the population, the growth of the blind department is almost invariably retarded." Proceedings, 1871, p. 87. See also *ibid.*, p. 43; 1874, p. 11; 1878, p. 149; 1886, p. 47; 1915, p. 61; Proceedings of Conference of Principals of Schools for Deaf, 1872, pp. 146, 151; Proceedings of American Association of Workers for Blind, 1911 p. 101; Report of Michigan Penal, Reformatory, and Charitable Institutions, 1876, p. 31; 1878, p. 129; Message of Governor of Colorado, 1883, p. 14; Message of Governor of West Virginia, 1901, p. 6; 1903, p. 45; 1905, p. 36; 1911, p. 26; *Colorado Index* (Colorado School), Feb. 19, 1909; *Washingtonian* (Washington School for Deaf), May, 1910; Report of Ohio School, 1867, p. 11; Louisiana

However, this arrangement, as we have also previously had occasion to observe, has not been adopted as a deliberate policy on the part of the state. It was begun when the schools were young, when pupils of both classes were few, and when, because of the ignorance of the public as to their respective needs, one plant was thought to be adequate for both. The plan was usually allowed to continue until the resources of the State and the number of both classes had increased to such an extent as to make obvious the wisdom and the necessity of separate institutions. In those States where the dual institution is still retained, it is in all probability only a question of a few years until provision will be made for the separate education of the two classes; and eventually there will be independent institutions for each in all the States.

PROVISION FOR DEAF-BLIND PUPILS

Deaf-blind children, under a double and special handicap as they are, present a peculiar and difficult educational problem. Aside from their instruction, they require no small amount of personal care and attention. Such children have more frequently been educated in schools for the deaf than in schools for the blind.¹ Sometimes special authorization for their teaching, together with a special appropriation, has to be obtained from the legislature, but little difficulty is ever met with in this respect.² Suggestion has been made of a National institution for deaf-blind children for the entire country, especially for purposes of observation and classification. The increasing feeling seems to be that such children, after some individual attention in pre-school years, should be placed in schools for the blind.³

PROVISION FOR FEEBLEMINDED BLIND

In many of the schools for the blind a problem has arisen in connection with the seeking of admittance of a number of children who are

School, 1874, p. 32; Michigan School, 1878, p. 70; 1880, p. 62; California School, 1902, p. 18; 1906, p. 10; 1908, p. 12; Report of West Virginia Board of Charities, 1910, p. 209; Proceedings of National Conference of Charities and Correction, 1882, p. 209. On the other hand, see Proceedings of American Association of Instructors of Blind, 1915, p. 61. In New Mexico, where there are separate schools for the blind and the deaf, the Governor of the State has advised their consolidation on the ground that one institution "could minister to the needs of both." Message, 1907, p. 21.

¹ It was at the American School for the Deaf at Hartford, Connecticut, in 1824 that the first deaf-blind pupil in the country began to receive instruction. It was at the Perkins Institution, however, a few years after its opening that Laura Bridgman drew the attention of the whole world to what might be done for such persons. At the Perkins Institution certain special provision is made for them. The number of deaf-blind pupils in a single school seldom exceeds two or three, often there being but one.

² In a few States provision has been made for the education of such children in their homes.

³ At times limited attendance at a school for the deaf may be desirable. Stress should be placed upon raised print, but instruction should be included in speech and in the manual alphabet (and perhaps to a certain extent in the sign language). See White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 297.

feeble-minded as well as defective in sight.¹ Educators of the blind have been called upon to give considerable attention to this class, and it has been a serious question what to do with them. Some of these children who have applied at the schools have been rejected; others have been allowed to enter.² Their presence is found not to be suited to the purposes of the schools, while an influence not altogether wholesome or salutary is exercised. Such children require more than their share of attention; and they interfere with and impede the regular school work of the institutions. It has become the general conviction that children who are at once blind and feeble-minded should be placed in proper institutions for the feeble-minded, or should otherwise be specially provided for.³

GOVERNMENT OF INSTITUTIONS

The government of the institutions for the blind is practically the same in the different States. They are all in the hands of boards of trustees, boards of directors, boards of managers, or boards of visitors, as they are variously called, or under the direction of State boards of charities, boards of control, department of public welfare, or other central bodies.⁴ The semi-public institutions, which, as we have seen,

¹ It is to be remembered that in some States no provision at all is made for the feeble-minded. Both educators of the blind and of the deaf have been instrumental in creating institutions for the feeble-minded, largely from their peculiar opportunities of coming into contact with them and of realizing the need. In a few States, as Illinois, Minnesota, and Washington, departments for the feeble-minded were established for a time in connection with schools for the deaf and the blind. In Montana such a department is still maintained.

² In a few cities there have been special classes in the public schools for such children. Now and then a special appropriation has been made for them in institutions for the feeble-minded.

³ Possibly observation cottages should be established to determine whether particular children should be placed in a school for the blind or in an institution for the feeble-minded. If in special institutions for the latter class, they should be specially cared for, possibly under special attendants. See Proceedings of American Association of Instructors of Blind, 1918, p. 100; 1920, p. 31; *Teachers' Forum*, *passim*; White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 101.

⁴ On the government of the schools in general, see Census Bureau, Summary of State Laws Relative to Care of Dependent Classes, 1913; United States Bureau of Education, Bulletin no. 47, 1915, p. 801; Proceedings of American Association of Instructors of Blind, 1888, p. 39; Report of Royal Commission on Blind, Deaf and Dumb, etc. (England), 1889, iii., p. 456; Bulletin of Iowa Institutions, vii., 1905, p. 429; ix., 1907, p. 168; xiii., 1911, p. 147; Proceedings of 4th Reunion of Officers and Alumni of Ohio School, 1885, p. 151; *American Journal of Sociology*, iv., 1898, p. 51; vii., 1901, p. 359; *American Annals of Deaf*, xlviii., 1903, p. 348; lviii., 1913, p. 327. The trustees of a school are State officials, to be appointed by the Governor. *People of North Carolina v. McKee*, 68 N. C., 429 (1873). Where on the expiration of the term of the directors of a school for the deaf, the legislature failed to make an appointment as required by law, an appointment made by the Governor was held to be invalid, the original directors being permitted to hold over. *Holt v. Bristol*, 122 N. C., 245, 30 S. E., 1 (1898). See also Report of North Carolina School, 1872, p. 8; Message of Governor of North Carolina, 1872, p. 27. A person may be president at the same time of the institutions for the deaf, for the blind, and for the insane, and may draw more than one salary. *State v. Harrison*, 116 Ind., 300, 19 N. E., 146 (1888). On the gen-

started as private concerns under private boards of trustees, have so remained. These boards control their affairs, but are subject to such regulation as the state may direct. Such boards are usually self-perpetuating bodies; or are elected by the members of the societies, this being especially the case when membership therein is open to any one on the payment of the prescribed fees. In all cases the members serve without compensation. The size of the boards varies considerably, but they are usually large, having as a general thing from twelve members to twice that number.

Where the school is strictly a State institution,¹ the board is usually appointed by the Governor of the State, often with the approval of the State senate in addition.² In several of the States some public officer, occasionally the Governor, but more often the State superintendent of public instruction, is a member *ex-officio*.³ These boards are generally composed of from three to seven members, and occasionally of a larger number.⁴

In certain States the schools are under special boards such as we have described, without supervision or regulation from any other public body: Alabama, Georgia, Mississippi, New Mexico, South Carolina, and Utah. In a larger number of States the schools are in the

eral powers and duties of trustees, see *Kentucky Institution for Education of Blind v. City of Louisville*, 123 Ky., 767, 97 S. W., 402, 8 L. R. A. (n. s.), 553 (1906); *Kentucky Institution for Education of Blind v. Murray*, 155 Ky., 658, 160 S. W., 245 (1913); *Lucas v. Futrell*, 84 Ark., 540, 106 S. W. 667 (1907); *State v. Board of Administration*, 92 Ohio, 457, 111 N. E., 283 (1915); *Chamberlain v. Clayton*, 56 Iowa, 331, 9 N. W., 237, 41 Am. Rep., 101 (1881); *Wall v. Board of Directors*, 145 Cal., 468, 78 Pac., 951 (1904); *Ellis v. North Carolina Institution for Deaf and Dumb*, 68 N. C., 423 (1873); *People of North Carolina v. Bledsoe*, 68 N. C., 457 (1873); *O'Neill v. Sewell*, 85 Ga., 481, 11 S. E., 831 (1890).

¹ In nearly all cases the schools were placed at first in the hands of special boards of trustees, with connection with no other bodies, and it was only later that changes were brought about. In some States there have been various experiments with the organization of the governing boards, and with the number of members which they were to contain. A few schools at the beginning were put under the direction of a State educational institution, of the State department of education, or of certain State officers. In several of the early schools the same board had temporary charge of other classes as well, especially the deaf, and now and then the feeble-minded or insane.

² In a few instances boards have for a time been elected by the legislature, or have been self-perpetuating, as in Alabama and Tennessee. The latter is still the arrangement in Georgia. In some cases a certain number of members must be residents of the locality of the school. In Alabama a member is appointed from each of the Congressional Districts of the State, with three from the local District. In several cases the superintendents of the schools are appointed directly by the Governor. In Montana, of the three members of the local executive board, two are appointed by the Governor and the State board of education, the third member being the executive officer of the school. Of the members of the Connecticut Institute, two are selected by the State board of education. In the case of the Pennsylvania Institution, the Governor is patron. Of the twelve members of the Perkins Institution one-third have been appointed by the Governor of Massachusetts.

³ In Alabama, New Mexico, and Utah the Attorney-General of the State is a member. Occasionally a blind person is made a member.

⁴ In a few States compensation is afforded, as in Indiana, Missouri, Montana, Oklahoma, and Texas. This usually may not exceed \$5 per day or \$300 per year for each member.

immediate charge of special boards, but are subject at the same time to the visitation, inspection, supervision, or general regulation of the State department of public welfare or other central body:¹ Colorado, Indiana, Maryland, Massachusetts, Michigan, Missouri, Montana, New York, North Carolina, Oklahoma, Pennsylvania, and Virginia.² Such connection is in Ohio, also, with direction in the department of education. Such central organizations are found in most of the States, and in a considerable number have some connection with the schools for the blind. In certain States the schools are directly under the control of the central State body, no special or local board intervening: Arkansas, Illinois, Minnesota, Nebraska, North Dakota, Oregon, South Dakota, Tennessee, Texas, Washington, and Wisconsin.³ There is also very frequently attention from boards of health, auditing departments, civil service commissions, and similar bodies.

In some States the schools are related to the State department of education, which may be said to be the increasing tendency. In California, Idaho, Iowa, Louisiana, Montana, Ohio, Oklahoma, and West Virginia the schools are directly under the department.⁴ (In several States the boards of trustees include the State superintendent of public instruction as a member *ex-officio*, as in Alabama, Arizona, Oklahoma, South Carolina, and Virginia.) In Kansas and Florida the schools are under State departments having control of educational institutions. In Arizona, Colorado, Indiana, Kentucky, Massachusetts, Michigan, Montana, New York, North Carolina, Oklahoma, and Pennsylvania the schools are under special boards of trustees, with supervision by the State department of education. In Illinois there is also relation to this department. In most States departments of education are authorized to keep in touch with all the educational institutions of the State, and in this way may have contact with the schools for the blind.⁵ In some States there is thus inspection by both the departments of

¹ As a usual thing the schools for the blind are not expressly mentioned as under the oversight of these bodies, it merely being provided that all public or all charitable institutions are subject thereto.

² In certain of the States these bodies have only more or less financial concern with the schools. In Georgia, Illinois, Massachusetts, Minnesota, South Dakota, and Texas there are special boards of visitors or advisory committees for the schools. In Virginia there is some connection with the State commission.

³ Such bodies have complete control over the State's "charitable" or "eleemosynary" institutions (and occasionally over educational institutions as well). It is claimed for them that they secure greater economy and more equitable appropriations for the State institutions. See University of Nebraska Studies, Oct., 1905; Ohio Bulletin of Charities and Correction, xiv., 1908, 6, Dec., p. 5; Bulletin of Iowa Institutions, x., 1908, p. 210.

⁴ In Louisiana the school for the colored blind is connected with the State institution for higher education for Negroes.

⁵ In certain cases application for admission is made through the department of education.

public welfare and education.¹ In Connecticut the school is under the special State agency for the blind (and in Virginia in touch therewith).

PROCEDURE IN STATES WITHOUT INSTITUTIONS

In States without special institutions for the education of their blind children, and providing for them in a school in some other State, usually a neighboring one, there are a comparatively small number of pupils; and it is considered more economical, as well as more satisfactory generally, thus to contract with an outside school.² In Maine and Rhode Island the State departments of education have charge, in the former with appointments by the Governor; and in New Hampshire and Vermont, the State departments of public welfare.³ In Delaware the State agency for the blind has charge, in connection with the State department of education, and in New Jersey in connection with the department of public welfare. In the District of Columbia commitments are made through the commissioners of the District, after application to the institution for the deaf. In Nevada and Wyoming the education of blind children is directed by the State departments of education.⁴

¹ In several instances, as in Indiana, New Mexico, and Utah, the law of the State restricts the number of members of the boards of any one political party. In connection with the government of schools for the blind, one very regrettable feature has been the political influences which have been allowed in certain instances to interfere with and determine the conduct of schools. Occasionally the playing of "politics" has been of no small moment, perhaps with disastrous consequences to the well-being of the schools. Sometimes the administration of schools has been considered legitimate spoils to the party in power, and appointments have been made as a matter of reward, and removals as a matter of punishment. The evil effects of such proceedings are hard to overestimate, and indeed in an enlightened community are difficult of credence. Public opinion should severely condemn all attempts at political interference in the work of the education of the blind, and those seeking to promote it should be dealt with befittingly. Happily, however, such conduct seems now clearly on the decline in the schools, and we have reason to believe that its end is not far in the future. On the matter of politics in schools, see *Proceedings of American Association of Instructors of Blind*, 1888, p. 39; 1896, p. 24; *Mentor*, ii., 1892, p. 88; *Proceedings of National Conference of Charities and Correction*, 1882, p. 215; *Report of Ohio School*, 1895, p. 97 (6th reunion of former pupils); 1900, p. 90 (7th reunion). By the National Civil Service Reform League it has been resolved that politics should not interfere with schools for the blind or deaf. *Proceedings*, 1895, pp. 41, 43.

² This arrangement seems to give satisfaction in those States which have it. In the case of New Jersey it is said that the blind are thus educated "at a small fraction of what would be the cost to care for them in an institution" in the State. *Report of Department of Charities and Correction*, 1906, p. 21. See also *New Jersey Review of Charities and Corrections*, vii., 1908, p. 190; *Message of Governor of New Jersey*, 1897, p. 20. In Wyoming it is said that the blind "are obtaining an education in well established and well equipped schools in other States and receiving other benefits incident thereto at comparatively slight cost to this State." *Report of Board of Charities and Reform*, 1910, p. 71. See also *Message of Governor of Oregon*, 1897, p. 31; 1899, p. 25. On the other hand, see *Proceedings of New Jersey Conference of Charities and Correction*, 1908, p. 216; *Message of Governor of Maine*, 1895, p. 17.

³ In New Jersey immediate direction is through the special agency for the blind. In Maine and New Hampshire the Governor makes appointments.

⁴ On the arrangement for sending children to outside schools, see *Proceedings of National Conference of Charities and Correction*, 1902, p. 40. In the West the Governor or the Superintendent of public instruction has often in the past contracted out for education in an adjoining State.

CHAPTER XXIV

DAY SCHOOLS FOR BLIND

PLAN OF DAY SCHOOL

The schools for the blind organized in the United States have as a general thing been boarding institutions where the pupils have lived during their attendance thereat. This has been for the reason that, blind children being scattered over an entire State, it has appeared the advantageous procedure to gather them all into one central institution for their instruction. In time, however, as the number of these children has increased with the growth of certain communities, especially large cities, the question has arisen of providing for such by means of a local school on the order of that for children with sight, to be as fully a part of the city's or State's public school system.

The principle of the day school for the blind is really but the manifestation of the conviction, found in evidence in more than one field of education and of child welfare today, that institutional life for children should be reduced to its lowest possible limits. It results from a general belief that the institution is more or less out of place in modern conceptions of the treatment of the child, and is to be accepted only in the absence of anything better. An illustration of this view is found in the report on children of the National Conference of Charities and Correction in 1906:

Institutional care of healthy, normal children is objectionable . . . Institutional care for educational purposes is necessary for a portion of the deaf and blind children . . . but it is recognized that in large cities public schools can be provided for many deaf and blind children.¹

In the development of the movement, it is likely that the day school will become more and more common in centers of population, having a place in their regular school systems. Beyond such centers, however, it is doubtful if the plan will spread very far in the near future; and in nearly all the States there will probably be need for the continuance of the institutions, at least to accommodate children living in rural sections.²

¹ Proceedings, p. 88.

² Suggestion has been made, on the one hand, that blind children might attend a day school during their first years, later to be transferred to an institution; and, on the other hand, that they might have their elementary instruction in an institution, with later attendance at a day school.

ARGUMENTS FOR DAY SCHOOL

The great argument for the day school for the blind is that it is not well that children be "institutionalized." The habits and practices of the institution life are regarded as at variance with those of the normal life which should be enjoyed by all children, and to which they are entitled—this applying no less in educational matters than in others. It is the home that should be the center of the affection and interests of every child. No matter whether the institution affords more desirable surroundings than those found in particular homes from which children come, yet while in the institution they are removed from the line of growth of the normal child. The routine life and the associations of the institution are likely to have an effect on the child not altogether salutary or wholesome; while in the continued congregation of children of one distinguishing peculiarity, they may become less ready to meet the full relations of after life. On the other hand, in the institution many important lessons in domestic economy may fail to be learned, while the attitude towards life, socially, economically, and morally, which is given in the home, may in the greatest measure be lost. In the institution contacts with the outside world are in general curtailed or weakened.

During his attendance at the day school, the child does not become a stranger in his own home, while there is in turn kept alive a feeling of family responsibility. Parents also become much more willing to have their child in school, with the result that a larger proportion of blind children are induced to enter school than could be prevailed upon to seek admittance at an institution. The day school at the same time becomes a part of the known educational system. The equal standards in the instruction of the blind are at once recognized, while the public in general becomes better acquainted with their possibilities and with their limitations. Finally, a not unimportant factor in the situation appears in the lessened cost of the day school. For it no costly special plant is necessary, nor are large amounts to be paid for food, supplies, attendants, and the like. At present the average *per capita* cost for its maintenance is not less than half that for the institution.

ARGUMENTS AGAINST DAY SCHOOL

The main argument for the institution for the education of the blind is that they form a small but distinct portion of the community, that special methods have to be employed for their instruction, and that for meeting the situation as a whole this arrangement is best adapted. In the operation of day schools extraordinary duties are imposed upon

the regular schools in the providing of special teachers (and possibly also in the furnishing of escort for pupils to and from their homes). It remains a question, moreover, just how far blind children are on a level with their sighted comrades in their school life, or how far they are really absorbed into the ranks of the latter. In an institution, for its part, blind children may be under intelligent and helpful supervision their entire time, with proper provision for study and for all else that is concerned in their well-rounded development, influences being exerted that perhaps are quite absent from the home.¹

In the institution greater specialization is possible in the educational problems of the blind. In none but the largest of day schools can well-graded classes be expected; and in the want of such an arrangement pupils who are slow to learn are likely to have a hard and discouraging time of it. Moreover, in the institution there may be a relative freedom from a course of study standardized to meet the needs of children with sight, whereby is permitted the adoption of a course better adapted for the particular wants of the blind. In the association, furthermore, with children in a similar condition, or in the life outside the classroom, there is acquired a general information, often of a very practical character and value, which is not so fully to be had in any other way. In the institution, lastly, with its usually larger and more centralized resources, there may be more satisfactory results along lines other than those for mental development. To the physical well-being of the blind child, which is too often neglected, attention may be given in appropriate measure, with the furnishing of suitable facilities for general physical culture. In the study of music opportunities may be afforded on a scale and with a range hardly possible elsewhere. Finally, proper provision for manual training, including necessary equipment, is more likely to be available in the institution.²

GROWTH AND PRESENT ORGANIZATION OF DAY SCHOOLS

The day school movement, though materializing relatively late, is not a wholly new conception.³ It has been considered from time to time during the entire period of the education of the blind in the United States.⁴ Its actual appearance, however, was not until the

¹ In not a few homes the attention and care afforded blind children are inadequate, and possibly of improper character; some are quite unfit. See *post*, p. 466.

² In an institution also there may be better and fuller clinical facilities, or opportunities for conducting different kinds of investigations, with respect to blind children.

³ In some cases pupils living near an institution for the blind have been permitted to spend a part of the week at home. In certain cases day pupils are in fact received at the institutions.

⁴ See Report of Massachusetts Board of Charity, 1866, p. lvi.; Report of Perkins Institution, 1858, p. 8; 1868, p. 10; 1869, p. 4; 1871, p. 26; 1874, p. 119; Pennsylvania Institution, 1871, p. 15; Ceremonies at Laying of Corner Stone of New York State School,

beginning of the twentieth century.¹ The first city to take up the work was Chicago in 1900.² Since then day schools have been established in an increasing number of cities of the country.³

Day schools are now found in not less than one-fourth of the States. In Georgia and Louisiana they are organized and supported merely as parts of the local educational systems. In California, Illinois, Michigan, Minnesota, Missouri, New Jersey, New York, Ohio, Pennsylvania, Washington, and Wisconsin there is express statutory authorization for their establishment, with perhaps State funds granted for their maintenance.⁴ Where day schools are established under direct legal enactment, application by the local authorities is usually to be made to the State department of education, a minimum number of pupils being specified for a class.⁵ As a rule the law makes similar provision for the deaf, the crippled, and other physically defective classes. The increasing tendency is to include partially sighted children.⁶ When the State pays a part of costs, this may be one-half or three-fourths. Sometimes contiguous school districts may combine for the purpose of education; in some instances pupils may be sent to another district or center.⁷

In their practical organization, day schools consist of nothing more than the installation of appropriate facilities and appliances for the blind in the regular public schools.⁸ For a certain number of children living within convenient distance, centers are opened in a school building.⁹ In each a special teacher is employed for assistance in the learning of lessons and for general advice.¹⁰ The pupils, after due prepa-

1866, p. 39; Proceedings of American Association of Instructors of Blind, 1871, p. 17; *Outlook for Blind*, ii., 1908, p. 67.

¹ In certain cities, especially New York, Cleveland, Chicago, and Milwaukee, day schools have been largely promoted by associations for the blind.

² This came near being started in 1892, after the abandonment of the plan for a second institution in Illinois, which was to have been located in Chicago. See *Problem*, i., 1900, p. 82; Report of Chicago Board of Education, 1901, pp. 17, 106; 1907, p. 180; *Outlook for Blind*, i., 1907, pp. 30, 37.

³ Day schools in a few instances have been discontinued.

⁴ Special inspectors may be created with respect to the work of day schools.

⁵ This number may be 3, 5, or 10.

⁶ Such children, while not actually "blind," yet have eyesight so impaired as to require special educational facilities; they are really "border line cases," in the possession of too much sight to entitle them to admission to regular schools or classes for the blind, but of too little to permit them advantageously to continue with children who have normal sight. See *ante*, p. 122.

⁷ Sometimes special qualifications of teachers are set forth.

⁸ In certain cases boarding arrangements have been provided for.

⁹ It is customary to furnish guides to and from school when these are not otherwise provided for, and to pay street car fares as well. In several cities there is coöperation with local associations for the blind.

¹⁰ The number of pupils to a class seldom exceeds fifteen, and is sometimes much less. In cities where there are several centers, there is usually a general supervising teacher. In a few cases there is special provision for vocational guidance.

ration, especially as they pass from the lower to the higher grades, go for recitation to the regular classrooms in company with the seeing children. In most cases provision is also made for gymnasium work, for music, and for manual training.

NOTE TO CHAPTER XXIV.—On day schools for the blind, see J. L. Horn, "Education of Exceptional Children," 1924, pp. 234, 267; Arnold Gessell, "Preschool Child," 1923, p. 69; H. H. Hart, "Preventive Treatment of Neglected Children," 1910, p. 57; David Mitchell, "Schools and Classes for Defective Children" (Cleveland Educational Survey), 1916, p. 24; S. S. Forster, "Future of Blind," 1875; Alexander Barnhill, "New Era in Education of Blind," 1875; C. S. Berry, "Education of Handicapped Children in Michigan" (Bulletin no. 7, Superintendent of Public Instruction), 1926; National Education Association, "Education of Mentally Defective, Blind, Deaf, and Crippled in Public Schools," 1922; A. J. Winnie, "History and Handbook of Day Schools for Deaf and Blind," Wisconsin, 1912, p. 117; C. F. F. Campbell and M. D. Campbell, "Institutions for Blind in America," 1916; L. P. Ayres, "Cleveland School Survey," 1907, p. 207; Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 42; T. D. Wood and H. G. Rowell, "Health Supervisor and Medical Supervision of Schools," 1927, p. 376; Robert Meldrum, "Light on Dark Paths," 1891, p. 92; O. M. Sullivan and K. M. Snortum, "Disabled Persons," 1926, p. 140; G. B. Mangold, "Problems of Child Welfare," 1924, pp. 434, 468, 535; L. S. Rand, "Directory of Activities for Blind in United States," 1932; Transactions of National Association for Promotion of Social Science, 1874, p. 526; Proceedings of American School Hygiene Association, 1916, p. 226; 1917, pp. 92, 97, 136, 283; Proceedings of National Education Association, 1902, p. 851; 1903, p. 998; 1908, p. 1137; 1909, p. 343; 1910, pp. 1044, 1050; 1912, p. 1318; 1916, p. 820; 1920, pp. 102, 112; Proceedings of International Conference on Blind (England), 1914, p. 450; Proceedings of American Association of Workers for Blind, 1907, p. 126; 1911, p. 94; 1925, p. 48; Proceedings of American Association of Instructors of Blind, 1892, p. 15; 1910, pp. 31, 37; 1912, p. 53; 1918, p. 58; 1924, p. 218; 1930, p. 455, and *passim*; United States Office of Education, Bulletin, 1928, no. 9; 1930, no. 7, p. 29 ("Special Schools and Classes in Cities of 100,000 Population or More in United States"); Report of United States Commissioner of Education, 1881, p. ccxvi.; 1913, i., p. 471; 1915, i., p. 503; Bulletin of United States Commissioner of Education, 1911, no. 14, pp. 9, 34, 56 ("Provision for Exceptional Children"); 1913, no. 65; 1919, no. 65, p. 38 ("Eyesight of School Children"); Report of Cleveland Board of Education, 1910, p. 35; 1914, p. 42; Report of Wisconsin Department of Public Instruction, 1910, p. 51; Report of Milwaukee Board of School Directors, 1912, p. 55; Report of Chicago Board of Education, 1902, p. 67; 1907, p. 180; 1914, p. 356; 1923, p. 93 (special schools); 1927, p. 13 (special schools); Minnesota Department of Education, "Standards of Special Classes for Defective Children," 1931, p. 7; New York City Department of Education, Reports on Defective Classes, 1915, p. 53; Report of Massachusetts Board of Charity, 1866, p. 1; Minnesota Board of Control, Quarterly Bulletin, Sept., 1915, p. 86; Publications of Pennsylvania Institution, no. 3, June, 1924, p. 21 ("What Can Blind Do?"); White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 245; "The Handicapped Child," 1933, p. 72; Report of Attorney General of Ohio, 1919, p. 1093; American Encyclopedia and Dictionary of Ophthalmology, 1916, ix., p. 6419; Report of New York Commission for Blind, 1906, p. 30; Report of Minnesota Commission for Blind, 1923, p. 61; Report of Pennsylvania Commission for Blind, 1925, p. 25; Report of Ohio School, 1909, p. 11; Pennsylvania Institution, 1909, p. 14; 1910, p. 26; 1911, p. 15; 1923, p. 22; 1924, p. 63; 1925, p. 16; Perkins Institution, 1923, p. 16; 1924, p. 15; New York Institute, 1919, p. 29; *New Jersey Review of Charities and Corrections*, vi., 1907, p. 142; *Training School Bulletin*, Sept., 1908; *Annals of American Academy of Political and Social Science*, xcvi., 1921, p. 73; *Problem*, i., 1900, p. 70; *Education*, xxxi., 1910, p. 8; *Journal of Education*, lxxii., 1911, pp. 15, 76; lxxv., 1912, p. 288; *Educational Bi-Monthly*, v., 1910, p. 117; *Ophthalmic Record*, xiii., 1904, p. 458; *High School Teacher*, viii., 1932, p. 262; *Journal of Missouri State Medical Association*, ix., 1913, p. 238; *Survey*, xxii., 1909, p. 5; *Voices from Darkland*, June, 1916; *Outlook for Blind*, i., 1907, pp. 30, 35; ii., 1908, pp. 25, 48, 67; iv., 1910, p. 175; iv., 1911, p. 181; vii., 1913, p. 117; xi., 1917, pp. 19, 25; xv., 1921, pp. 70, 126; Dec., 1924, p. 55; March, 1927, p. 27; March, 1929, p. 9. See also reports of State and city departments of education in general.

CHAPTER XXV

PRIVATE INSTITUTIONS FOR EDUCATION OF BLIND

In addition to the schools which are maintained and controlled by the state for the education of blind children, there are several institutions for the purpose under private auspices, and particularly under the auspices of a religious body. They are usually under the immediate direction of a board of trustees. All but one are under the Catholic Church. They are: the Catholic Institute for the Blind in New York City (Bronx) (1909); St. Joseph's Home for the Blind in Jersey City, New Jersey (1890); St. Joseph's Home for Blind Girls in New York City (Staten Island) (1890), and St. Mary's Institution at Lonsdale, Pennsylvania (1922). The one non-religious institution is the Royer-Greaves School at King of Prussia, Pennsylvania (largely intended for backward blind children) (1921). Some of these institutions receive State aid. To a greater or less extent they are to be classed as homes as well as schools.¹

¹ In other homes for the younger blind a greater or less amount of instruction is provided. In the homes for pre-school children there is also a certain amount of education afforded, especially for those of school age. In one or two homes for blind children they go out to the public schools for education.

CHAPTER XXVI

PROVISION FOR HIGHER EDUCATION OF BLIND

QUESTION OF NATIONAL COLLEGE

In a complete system of education for the blind, we might expect that some provision would be made for the higher education of those pupils of the various schools of the country who might be fitted for it and who might be benefited by it.¹ As the final step in the work of their instruction in America, it has been proposed that a special college be created, prepared to receive blind students from all parts of the country. To undertake this task, the United States Government has been looked to in the first instance. It has been regarded as representing the centralized power of the land, and as the most suitable agency to reach all the blind.²

The matter of the creation of a National college for the blind by the United States has received frequent attention from educators and friends of the blind, and from the blind themselves. In 1871 the matter was definitely taken up at the meeting of the American Association of Instructors of the Blind.³ A few years later on the establishment of the American Printing House for the Blind, to which assistance was voted by Congress, it was suggested that a college might be realized in connection therewith, but the scheme did not meet with general approval.⁴ In 1886 Congress was formally asked by the former body to create a special college, but without affirmative result.⁵ Since that time there have been occasional efforts on the part of certain individuals to induce Federal action, such now and then taking the form of a memorial from

¹ A special reason advanced for such higher education is that thereby the standards of the schools would be raised and perhaps made in more general agreement. On the number of graduates from schools likely to enter the college, see *Problem*, ii., 1901, p. 29.

² Ground has been adduced in the fact that Congress has established in the District of Columbia an institution for the collegiate education of the deaf.

³ Proceedings, 1871, pp. 13, 30, 31.

⁴ See Chapter XXXVI. It was hoped at one time to have a college in connection with a National conservatory of music, which should be jointly controlled by the several States and the Federal Government. See Report of Perkins Institution, 1869, p. 21; *Journal of Social Science*, ii., 1870, p. 230. In Massachusetts in 1876 (Laws, ch. 6) there was incorporated an institution, the "American College and Musical Conservatory for the Blind," with power to hold property to the value of \$200,000. It, however, never materialized.

⁵ See Committee of American Association of Instructors of Blind, Letter to Chairman and Members of Committee on District of Columbia, 1886; Proceedings of American Association of Instructors of Blind, 1886, p. 64; Report of Maryland School, 1886, p. 10.

some State legislature.¹ Congress, however, has never felt itself called upon to move in this direction.² Suggestion has also been made that private philanthropy be invoked for the establishment of such an institution, and steps have even been considered of raising funds by general subscription; but little attention has ever been given to plans of this character.³

SUBSTITUTE FOR SPECIAL COLLEGE: SCHOLARSHIPS IN REGULAR COLLEGES

If in the existing circumstances a National college for the blind does not appear to be likely, nevertheless hopes for the higher education of the blind need not be abandoned. Another recourse is available, which may answer as well as, if not better than, a special institution. This is the providing of scholarships for the blind in regular colleges and universities. Such is now being generally regarded as the correct solution of the problem.

To the scholarship plan but one serious objection is to be offered—the difficulties which may be encountered by the blind in colleges the student bodies of which are made up of persons having sight. These difficulties, however, are not of insuperable character, especially in cases where there is a full determination to surmount them, as has been proved in divers instances. The advantages of the scholarships, on the other hand, are several. In the first place, they involve far less cost than a special institution would require, both in outlay necessary for its equipment and in its actual running expenses. This is all the more true because of the limited number of the blind to be benefited in any event. By means of scholarships, again, the blind are enabled to attend the best and most suitable colleges, instead of being restricted to a single one (with also the affording of a certain standing not otherwise possible in a special college). Finally, in the regular colleges the blind are brought into contact with the seeing, which is for the good of both.

For the creation of these special scholarships for the blind, action may be bespoken both on the part of the National Government and on the part of the individual States—unless private benevolence should

¹ See Laws of Minnesota, 1909, p. 709; Laws of North Carolina, 1909, p. 1366; Report of Minnesota Board of Control, 1908, p. 364; *Outlook for Blind*, iii., 1909, p. 19.

² On efforts to induce Congress to act, see *Problem*, ii., 1901, p. 49; *International Record of Charities and Correction*, i., 1886, p. 27; *Mentor*, iii., 1893, p. 321; *Outlook for Blind*, iii., 1909, p. 19; Proceedings of American Association of Instructors of Blind, 1904, p. 17; 1910, p. 25.

³ In several States there have been organized committees of graduates of the schools for the purpose of securing a college, though in most cases efforts have been directed towards action by the National Government.

choose to assist in the undertaking. Proposals have been duly made to Congress for the establishment of scholarships for the blind of the country at large—and in this case with greater likelihood of success than in the case of a special college. Application has been made from time to time, especially since the year 1896, by instructors of the blind and by organizations of the blind; and the question has been agitated in not a few quarters. On several occasions the matter has come near receiving favorable attention at the hands of Congress, though as yet final action has been postponed.¹

Whatever may be the course eventually to be taken by the Federal Government, there seems to be a rather plain duty before the several States in the matter of scholarships. In this way the higher education of the blind is but being provided for on the same terms as is that for persons who have sight. The particular action called for is in the main the appropriation of a small sum for each blind student to secure the aid of a seeing person to read to him—a sum which need not be in excess of a few hundred dollars for one year. In point of fact, full “scholarships,” which would include contingent expenses as well, are not thus created, but only the rendering of assistance to enable a blind person to meet the peculiar demands imposed on him.²

The States of the Union are one after the other taking action along this line, the first one being New York in 1907. Special financial assistance is at present afforded by legislative enactment in not less than one-half of the States: New York, Missouri, South Carolina, Ohio, Kansas, California, Minnesota, New Jersey, Indiana, Wisconsin, Iowa, Illinois, Pennsylvania, Oregon, Arkansas, North Carolina, and Colorado. In them it is as a usual thing provided that the stu-

¹ Beginning with the year 1899, a number of bills have been presented in Congress in respect to the higher education of the blind. In 1901 the committee on education of the House of Representatives made a report, favoring scholarships for blind students in colleges generally, with a request for an appropriation of \$75,000. In 1902 a bill was offered in the Senate, creating a National commission for the education of the blind, to provide scholarships, with an appropriation of \$50,000. In 1904 a bill was presented in the House of Representatives, creating a commission, the duties of which should be to discover and make examination of blind candidates for higher education, and to provide scholarships for those found successful, with the sum of \$50,000 appropriated for the purpose, immediate direction being in the hands of the Bureau of Education. In 1906 a somewhat similar bill was presented. See 56th Cong., 1st sess., H. R. Rep. 4347, 1899; 56th Cong., 2nd sess., H. R. Rep. 12, 221, 1900; 56th Cong., 2nd sess., H. R. Rep. no. 2424, 1901; 57th Cong., 1st sess., H. R. Rep. 18, 1901; 57th Cong., 1st sess., S. 4038, United States Senate Committee on Education and Labor, Hearings, 1902; 57th Cong., 1st sess., Report, no. 1318, 1902; 58th Cong., 2nd sess., H. R. Rep. 14,538, 1904; Proceedings of American Association of Workers for Blind, 1905, pp. 11, 49; Proceedings of American Association of Instructors of Blind, *passim*; Publications of Perkins Institution, no. 4, Dec., 1924, p. 364 (“Question of Higher Education of Blind”); *Problem*, ii., 1901, pp. 25, 27; *Outlook for Blind*, ii., 1908, p. 50.

² On direction of special aid, see Opinions of Attorney-General of Wisconsin, 1917, p. 371.

dent aided be in good and regular standing, and a candidate for a degree.¹ Sometimes a limitation is placed upon the number to be assisted in one year or upon the total amount to be afforded in one year.² Direction of this education is in the hands of the State school for the blind in California, New York, Arkansas, Colorado, Ohio, South Carolina, and North Carolina; of the State department of public welfare in Kansas, Oregon, Minnesota, and Wisconsin; of the State department of education in New Jersey, Pennsylvania, and Iowa; of the county court in Missouri; and in Illinois of the State agency for public instruction, the State school, and the supervisor of day schools in Chicago. In Indiana institutions of higher education in the State are required to furnish a reader at the request of blind students in attendance. In certain States attendance may be only at institutions within their borders, perhaps the State university. The tendency, however, is to permit technical or professional training as well as ordinary academic education, and at the most suitable institution.³

Financial aid for higher education of the blind is also received occasionally in a number of States from general public or general educational funds (including funds for vocational education), without direct or express authority. In certain other States it may be granted from some public agency for the blind. It is also received at times from private sources. Certain private institutions of learning have been generous in allowing scholarships to the blind.⁴ Occasionally a special private organization has undertaken to assist in the matter. To the graduates of a few of the schools aid is afforded at college by loans or otherwise.⁵

Possibly the total number of blind persons pursuing a college education in a single year is somewhat under one hundred. The number is steadily increasing, in part in keeping with increasingly generous provisions of State laws.

¹ There must usually be evidence of inability to make payment. In a few instances a previous residence in the State of a certain number of years is required. Report of progress is often prescribed.

² In States making special provision appropriations are at times withheld; perhaps for a time they are not availed of.

³ In a few schools there have been correspondence courses somewhat of college grade. In a few informal college education is now and then attempted. See Report of Kansas School, 1886, p. 9.

⁴ See *Outlook for Blind*, viii., 1915, p. 153. Private assistance may include direct monetary contributions or volunteer reading.

⁵ By the American Foundation for the Blind certain scholarships are provided, especially for assistance in professional training.

NOTE TO CHAPTER XXVI.—On the matter of higher education for the blind (including both special college and scholarships), see White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 264; "The Handicapped Child," 1933, p. 84; S. S. Forster, "Scholarships for Blind" (South Kensington), 1877; S. S. Forster, "What Shall We Do with Blind Boys," 1879; In Memoriam, S. S. Forster, 1891; J. W.

Welch, "Abilities and Achievements of Blind," 1905, p. 249; A. I. Wilson, Address before 3rd Annual Convention of Missouri National College Association for Blind, 1897; Address before Blind People's Higher Education and General Improvement Association, 1896; D. W. McGill, Address before same body, 1898; Voting Bulletins of same body, 1897, 1898, 1899; Bulletin of Missouri National College Association for Blind, 1895; Supplemental Bulletin, 1897; Report of International Conference on Blind (England), 1905, p. 92; Proceedings of World Conference on Work for Blind, 1931, p. 72; Report of Conference on Matters Relating to Blind (England), 1902, p. 14; Transactions of National Association for Promotion of Social Science, 1873, p. 409 (R. H. Blair); 1879, p. 451 (J. P. Coldstream); Report of Jubilee Celebration of Foundation of Yorkshire School for Blind, 1883 (1889), p. 85; Bulletin of National Catholic Educational Association, 1925, p. 561; Proceedings of National Education Association, 1900, p. 671; Proceedings of American Association of Workers for Blind, 1905, p. 11; 1907, p. 128; 1911, p. 103; Proceedings of American Association of Instructors of Blind, 1880, p. 51; 1886, p. 64; 1888, p. 23; 1890, p. 94; 1904, p. 17; 1910, p. 25; 1920, p. 41; 1926, p. 284; Report of Minnesota Board of Control, 1908, p. 364; Indiana Bulletin of Charities and Correction, March, 1917, p. 47; Report of Connecticut Board of Education of Blind, 1900, p. 4; Report of Ohio School, 1888, p. 11; 1893, p. 108 (5th reunion of former pupils, 1890); Maryland School, 1901, p. 10; 1903, p. 69; California School, 1914, p. 16; Western Pennsylvania School, 1914, p. 17; 1919, p. 23; Pennsylvania Institution, 1913, p. 32; 1921, pp. 11, 71, and *passim*; Kansas School, 1880, p. 12; 1884, p. 5; Report of United States Commissioner of Education, 1915, i., p. 506; Publications of Perkins Institution, no. 3, Dec., 1924; *Education*, xx., 1900, p. 298; *Charities Review*, ix., 1899, p. 322; x., 1900, p. 194; *Problem*, i., 1900, pp. 10, 15, 74; ii., 1901, pp. 25, 86; iii., 1902, pp. 47, 99; *California School Quarterly*, no. 2, 1926; *Journal of Education and School Work*, lv., 1923, p. 352; *Pedagogical Seminary and Journal of Genetic Psychology*, xxxi., 1924, p. 259; *Journal of Social Sciences*, ii., 1870, p. 230; *Outlook*, lxxxvi., 1907, p. 938; *British Medical Journal*, 1926, ii., p. 1103; *Outlook for Blind*, ii., 1908, p. 47; iii., 1909, p. 17; *The Blind*, ii., 1904, p. 185; ii., 1905, p. 301; *Teacher of Blind*, *passim*; *Teachers Forum*, Sept., 1930, and *passim*.

CHAPTER XXVII

PROVISION FOR EDUCATION OF BLIND BY STATES

In the present chapter are to be examined the provisions for the education of blind children in the several States individually to determine to what extent and in what manner instruction has been undertaken in each.¹

Alabama. A school for the deaf was established at Talladega in 1858, into which in 1867 the blind were allowed to enter. In 1888 a separate institution, the Alabama School for the Blind, was set up. In 1891 the Alabama School for Negro Deaf and Blind was created. The schools are governed by a board of trustees.²

Arizona. From 1891 to 1929 blind children were sent to schools in other States. In the latter year the Arizona School for the Deaf and Blind was created at Tucson. It is under a board of trustees, with relation to the State department of education.³

Arkansas. A private school was opened at Arkadelphia in 1860, which in 1868 was removed to Little Rock and taken over by the State. The Arkansas School for the Blind is in the hands of a board of managers, with relation to the State department of public welfare.⁴ Provision is made for higher education.⁵

California. The California School for the Blind was established at Berkeley in 1921, a joint school for the deaf and the blind having been

¹ State boards of charities, control, etc., are generally referred to as State departments of public welfare.

² Laws, 1860, p. 344; 1867, p. 550; 1869, ch. 107; 1870, p. 95; 1871, p. 89; 1879, p. 34; 1885, p. 158; 1887, pp. 56, 70; 1889, p. 29; 1891, ch. 209; 1893, p. 458; 1893, p. 943; 1900, p. 23; 1901, p. 24; 1903, p. 47; 1904, p. 45; 1907, pp. 11, 910; 1919, p. 442; School Code, 1927, §§ 577-587. In 1870 a school was started at Mobile, which lasted a few years. The joint school was at first called the Institution for the Education of the Deaf, Dumb and Blind, and in 1867 the Institution for the Deaf, Dumb and Blind. The institution was known as the Academy for the Blind till 1900.

³ Laws, 1891, ch. 94; 1895, ch. 10; 1912, chs. 9, 36; 1922, ch. 35; 1929, ch. 93; 1931, p. 422; Rev. Code, 1928, § 1152. A department for the blind was to be created at the State university when there were as many as five applicants.

⁴ Laws, 1859, p. 45; 1867, p. 550; 1868, p. 154; 1875, p. 134; 1879, p. 83; 1883, pp. 182, 196; 1893, pp. 223, 273; 1895, ch. 78; 1901, p. 361; 1909, p. 864; 1911, ch. 184; 1915, ch. 108; 1917, p. 942; 1921, ch. 530; 1925, chs. 49, 117; 1927, chs. 57, 267; Dig. Stat., 1927, §§ 9341a-9341f, 92341-9234s, 9489a, 9489b. A private school was started at Clarksville in 1850, which lasted a few years. The private school at Arkadelphia received State aid. In 1879 the name of the school was changed from the Institute for the Education of the Blind. Since 1893 there has been connection with the State board of public welfare.

⁵ Laws, 1927, ch. 682; Dig. Stat., §§ 9480a, 9480b.

in existence since 1860. It is under the State department of education.¹ There are day schools at Los Angeles (1917) and Long Beach (1930), under a State law.² Provision is made for higher education.³

Colorado. A school for the deaf was established at Colorado Springs in 1874, in which in 1883 the blind were admitted. The Colorado School for the Deaf and Blind is governed by a board of trustees, with relation to the State department of education.⁴ Provision is made for higher education.⁵

Connecticut. In 1832 the State began sending blind children to the Perkins Institution in Massachusetts, a policy that continued till a school was created in the State to receive them. In 1888 a private school for young blind children was established at Hartford, to which since 1893 the State has made appropriations. It is a part of the Connecticut Institute for the Blind, under a board of trustees. A special board of education of the blind has charge of the instruction of blind children.⁶

Delaware. Blind children are sent to schools in Pennsylvania and Maryland, this policy having been begun in 1835. The State commission for the blind has charge of their education.⁷

District of Columbia. On the establishment of a school for the deaf in Washington in 1857, a department was created for the blind. In 1865 this department was closed, and since that time blind children

¹ Laws, 1860, pp. 211, 277; 1861, p. 81; 1864, pp. 211, 397; 1866, pp. 540, 579; 1868, p. 156; 1874, pp. 36, 115, 751; 1876, p. 686; 1880, p. 21; 1903, p. 388; 1905, p. 488; 1913, pp. 235, 412, 1443; 1915, p. 52; 1921, ch. 605; 1923, chs. 70, 241; 1927, chs. 156, 660; 1931, p. 2194; Pol. Code, 1931, §§ 368, 1662, 2251-2262 Gen. Laws, §§ 1331, 1985, 1987, 7519. The school was first called the Institution for the Instruction of the Deaf, Dumb and Blind; in 1861, the Institution for the Education and Care of the Indigent Deaf, Dumb and Blind; in 1867, the Institution for the Education of the Deaf, Dumb and Blind; in 1905, the Institute for the Deaf and Blind; and in 1913, the School for the Deaf and Blind. The school was formerly under a board of trustees, with supervision by the State department of public welfare.

² Laws, 1931, p. 221; Gen. Laws, p. 49094.

³ Laws, 1913, p. 806; 1915, p. 1329; 1917, p. 485; 1927, ch. 585; Gen. Laws, §§ 1985, 7490.

⁴ Laws, 1874, p. 101; 1881, p. 206; 1883, p. 269; 1885, p. 277; 1887, p. 394; 1891, p. 388; 1895, p. 223; 1909, pp. 324, 333; 1915, pp. 155, 365; 1919, p. 691; 1921, p. 308; Comp. Laws, 1921, §§ 320, 8192-8217, 8353, 8486-8489. The school was called the Institute for the Education of Mute and Blind till 1890, when it became the Institution for the Education of the Deaf and Blind. It received its present name in 1895. It has been visited by the State department of public welfare.

⁵ Laws, 1921, p. 108; 1923, p. 116; 1927, ch. 67.

⁶ Laws, 1829, p. 101; 1893, ch. 156; 1895, chs. 303, 319; 1899, ch. 218; 1901, ch. 164; 1903, ch. 62; 1905, ch. 66; 1919, ch. 306; 1921, chs. 160, 231, 236; 1925, ch. 56; 1927, ch. 133; Gen. Stat., 1930, §§ 464, 1043-1052, 1068-1080.

⁷ Laws, 1835, pp. 317, 356; 1837, p. 66; 1841, p. 356; 1843, p. 418; Rev. Stat., 1852, p. 138; Laws, 1853, p. 118; 1860, ch. 119; 1865, ch. 553; 1866, chs. 18, 19; Rev. Stat., 1852-1874, p. 245; Laws, 1875, ch. 58; 1893, chs. 83, 645; Rev. Stat., 1852-1893, pp. 388-390; Laws, 1899, ch. 245; 1907, ch. 143; 1909, p. 140; 1913, p. 265; Rev. Stat., 1915, §§ 414, 2585-2592, 3743. The Justices of the Superior Court are trustees *ex-officio*, recommending children to the Governor.

have been sent to Maryland for education, under the direction of the commissioners of the District, after application to the Columbia Institution for the Deaf.¹

Florida. The Florida School for the Deaf and the Blind was opened at St. Augustine in 1885. It is in the hands of the State board for educational institutions.²

Georgia. On the opening of the State school for the deaf at Cave Spring in 1846 some blind children were placed in it for instruction. The Georgia Academy for the Blind was established at Macon in 1851. It is governed by a board of trustees.³ There is a day school at Atlanta (1922).

Idaho. Before the creation of an institution in the State, blind children were sent to schools in other States. The Idaho State School for the Deaf and the Blind was established at Boise in 1906, being removed to Gooding in 1910. It is directed by the State department of education.⁴

Illinois. A private school was opened at Jacksonville in 1848, which was taken over by the State the following year. The Illinois School for the Blind is controlled by the State department of public welfare, the department of education also having powers of inspection.⁵ There is a day school in Chicago (1900), under a State law.⁶ Provision is made for higher education.⁷

Indiana. The Indiana School for the Blind was established at Indianapolis in 1847, before which time pupils were sent to the schools in Kentucky and Ohio. It is directed by a board of trustees, with

¹ Stat., 1857, ch. 46; 1865, ch. 50; 1899, ch. 424; 1908, ch. 198; 1911, ch. 285. Until 1908 the commitment of children was in the hands of the Columbia Institution for the Deaf.

² Laws, 1883, ch. 3450; 1895, ch. 4362; 1903, ch. 5209; 1905, ch. 5384; 1909, ch. 5927; Comp. Laws, 1927, §§ 185, 778, 787, 816-882, 7429-7431. The school was called the Institute for the Blind, Deaf and Dumb till 1903, when it became the School for the Blind, Deaf and Dumb. The present name was given in 1909. In 1895 a department for the colored was established. The first board of trustees consisted of the State board of education; in 1903 it was placed under a special board; and in 1905 it came under the present plan.

³ Laws, 1845, p. 25; 1851, p. 4; 1854, pp. 16, 97; 1855, p. 10; 1857, p. 11; 1859, p. 15; 1860, p. 35; 1868, p. 13; 1870, pp. 455, 494; Code, 1873, p. 165; Laws, 1883, p. 61; Ann. Code, 1928, §§ 158, 1282, 1333, 1401-1415. Until 1871 the school was known as the Institution for the Blind. In 1882 a department was opened for the colored. The school also has a board of visitors. From 1863 to 1867 the school was at Fort Valley.

⁴ Laws, 1891, p. 226; 1899, pp. 162, 462; 1905, p. 380; 1907, p. 240; 1909, p. 379; 1911, chs. 34, 42; 1913, p. 324; 1917, p. 240; 1929, ch. 184; Code, 1932, §§ 32-2901-2906, 64-806-808.

⁵ Laws, 1849, p. 39; 1851, p. 100; 1852, p. 90; 1855, pp. 35, 42; 1857, p. 84; 1869, p. 63; 1875, p. 104; 1887, p. 100; 1905, p. 87; 1909, p. 102; 1912, p. 66; 1917, p. 734; 1925, ch. 23; Rev. Stat., 1931, pp. 250, 262, 2595. In 1916 the name of the school was changed from the Institution for the Education of the Blind. In 1909 the school came under its present management, having previously been under a special board of trustees. It has also a board of visitors. In 1869 one board was given charge of the blind, the deaf, and the insane.

⁶ Laws, 1897, p. 290; 1911, p. 502; 1917, p. 723; 1923, p. 11; 1927, p. 198; 1929, p. 735; Rev. Stat., pp. 2529, 2594.

⁷ Laws, 1925, p. 234; 1931, p. 216; Rev. Stat., p. 2595.

supervision by the State departments of education and public welfare.¹ Provision is made for higher education.²

Iowa. A private school was opened at Keokuk in 1852, which the following year was taken over by the State and moved to Iowa City, being removed in 1862 to Vinton. The Iowa School for the Blind is controlled by the State board of education.³ Provision is made for higher education.⁴

Kansas. A private school was started in Kansas City in 1864, which was taken over by the State in 1867. The State School for the Blind is governed by the State board for educational institutions.⁵ Provision is made for higher education.⁶

Kentucky. In 1842 a private school was opened in Louisville, which the following year was adopted by the State. The Kentucky School for the Blind is in the hands of a board of trustees, and is related to the State department of education.⁷

Louisiana. The State school for the deaf was established at Baton Rouge in 1852, in which in 1856 a department for the blind was created. In 1871 a separate institution for the blind was set up, to be reunited with that for the deaf in 1888. In 1898 it was made the Louisiana State School for the Blind. In 1922 the State School for Negro Deaf and Blind was opened at Scotlandville. The schools are

¹ Laws, 1847, p. 41; 1848, ch. 76; Rev. Stat., 1852, p. 161; Laws, 1859, ch. 41; 1865, p. 124; 1869, p. 22; 1879, p. 4; 1883, p. 15; 1891, p. 199; 1895, ch. 145; 1897, p. 157; 1899, p. 477; 1907, ch. 98; 1909, ch. 146; 1913, ch. 213; 1921, p. 337; 1923, p. 238; Ann. Stat. 1926, §§ 3975, 4055, 4089-4095, 6452. In 1908 the name was changed from the Institution for the Education of the Blind. From 1895 to 1897 the school was under a board of control. At an early period the president of the board of trustees was also president of the boards of the school for the deaf and of the asylum for the insane.

² Laws, 1917, ch. 169; 1919, p. 227; Ann. Stat., § 7281.

³ Laws, 1849, ch. 121; Code, 1851, p. 186; Laws, 1853, ch. 26; 1855, ch. 56; 1857, ch. 51; 1864, ch. 36; 1870, ch. 31; 1872, ch. 44; 1877, ch. 72; 1898, ch. 118; 1909, chs. 88, 175; 1911, ch. 141; 1917, ch. 160; 1925, ch. 74; 1929, ch. 300; Code, 1931, §§ 3919, 4030, 4066, 4067, 4071-4075, 4313, 4348, 4426-4432. The school was called the Asylum for the Blind until 1855, the Institution for the Education of the Blind until 1872, and the College for the Blind till 1923. It was under a special board of trustees till 1898, when it came under the State board of control. The present arrangement was effected in 1911.

⁴ Laws, 1931, ch. 164.

⁵ Gen. Stat., 1868, p. 102; Laws, 1868, chs. 7, 25; 1873, chs. 135, 137; 1875, chs. 37, 67; 1876, ch. 130; 1877, ch. 130; 1901, chs. 228, 353; 1903, ch. 303; 1905, chs. 384, 475; 1913, ch. 287; 1915, ch. 328; 1917, ch. 297; 1923, chs. 183, 231, 267; Rev. Stat., 1923, §§ 11-104, 72-5301-5302, 76-108, 76-1101-1110. In 1877 the name was changed from the Asylum for the Blind to the Institution for the Education of the Blind, and in 1913 to its present title. For most of its career the school has been under a special board of trustees. In 1876, with the school for the deaf and the asylum for the insane, it was placed under a single board. From 1901 to 1913 it was under the State board of control.

⁶ Laws, 1915, ch. 320; 1931, ch. 23; 1933, ch. 303; Rev. Stat., § 76-157.

⁷ Laws, 1842, p. 26; 1844, p. 91; 1845, p. 45; 1846, ch. 148; 1850, p. 45; 1852, p. 357; 1863, ch. 42; 1870, ch. 687; 1873, ch. 16; 1876, p. 89; 1884, p. 29; 1910, p. 277; 1914, p. 108; 1916, p. 622; 1930, ch. 72; Stat., 1929, §§ 299-311, 4390. Until 1916 the school was called the Institution for the Education of the Blind. The first board consisted of the local board of education. In 1884 a department was created for colored children.

under the State department of education.¹ There is a day school in New Orleans (1917).

Maine. In 1834 the State began sending its blind children to the school in Massachusetts, a policy pursued to the present. The State department of public welfare is in charge of their instruction, with the approval of the Governor and council.²

Maryland. In 1837 the State began sending its blind children to the school in Pennsylvania for education. In 1853 an institution was established in Baltimore under private auspices. In 1912 it was removed to Overlea, a suburb of Baltimore. It is now known as the Maryland School for the Blind, with its government in a board of directors, being practically a State institution. In 1872 the Maryland School for the Colored Blind and Deaf was created, now also located at Overlea, which is controlled by representatives of the State school for the deaf and of that for the blind. Both of these institutions are visited by the State department of public welfare.³

Massachusetts. A school under private auspices was opened in Boston in 1832. In the same year the State began to make appropriations for its pupils. In 1913 the school was removed to Watertown. It is now known as the Perkins Institution and Massachusetts School for the Blind. It is directed by a board of managers, and is visited by the State departments of education and public welfare.⁴

¹ Laws, 1855, p. 356; 1866, p. 124; 1870, p. 53; 1871, ch. 92; 1878, p. 251; 1888, ch. 49; 1890, ch. 115; 1898, pp. 141, 257; 1902, p. 382; 1908, pp. 48, 356; 1916, pp. 191, 506; 1920, chs. 67, 159; Ann. Rev., 1915, pp. 193-195, 1088; Supp., 1926, p. 558. The school was first called the Institution for the Education of the Deaf, Dumb and Blind. In 1871 it became the Institution and Industrial Home for the Blind; in 1874, the Institution for the Education of the Blind; and in 1880, the Institution for the Blind. In 1898 the last named title was again given. The present one was bestowed in 1908. Until 1920 the school was under a special board of trustees. The school for the colored is in connection with the State University and Agricultural and Mechanical College for Negroes.

² Laws, 1834, ch. 70; 1885, ch. 268; 1893, ch. 203; 1899, ch. 2; 1907, ch. 10; 1913, ch. 46; Rev. Stat., 1930, pp. 398, 1710. In 1913 it was provided that blind children might be sent to other institutions as well.

³ Laws, 1837, ch. 173; 1839, ch. 28; 1840, ch. 24; 1849, ch. 209; 1853, ch. 203; 1854, chs. 67, 224; 1865, ch. 75; 1867, ch. 247; 1868, chs. 205, 409; 1870, ch. 322; 1864, ch. 42, p. 483; 1886, chs. 278, 481; 1892, ch. 272; 1904, ch. 299; 1906, ch. 236; 1912, p. 395; 1918, ch. 441; 1924, chs. 30, 376; 1929, ch. 152; Ann. Code, 1924, pp. 1197-1201, 2518; Supp., 1929, pp. 460, 461. In 1886 the name was changed from the Institution for the Blind.

⁴ Laws, 1829, ch. 113; 1830, ch. 81; 1833, chs. 28, 36; 1847, ch. 49; 1864, chs. 56, 96; 1865, ch. 17; 1867, ch. 311; 1868, ch. 200; 1869, chs. 71, 333; 1871, ch. 300; 1873, ch. 118; 1885, ch. 118; 1886, ch. 241; 1887, chs. 75, 179; 1888, ch. 239; 1889, ch. 226; 1890, ch. 136; 1902, ch. 297; 1906, ch. 383; 1907, ch. 173; 1916, ch. 160; 1918, ch. 266; 1919, ch. 350; 1920, ch. 201; 1923, ch. 362; 1924, chs. 453, 499; 1925, ch. 286; 1929, ch. 268; 1931, chs. 394, 426; Gen. Laws, 1932, pp. 846-848. The school was called the New England Asylum for Educating the Blind till 1833, and the New England Institution for the Education of the Blind till 1839, when it became the Perkins Institution and Massachusetts Asylum for the Blind, being so named for an early benefactor. It received its present title in 1876. There is also an advisory committee of visitors for the school. The Governor of the State has appointed pupils to the school, on the request of the parent, and with the approval of the department of education.

Michigan. A joint school for the deaf and the blind was opened at Flint in 1854, though the blind did not enter till 1865. In 1880 the Michigan School for the Blind was established at Lansing. It is governed by a board of directors, with supervision by the State departments of education and public welfare.¹ There are day schools at Detroit (1912) and Grand Rapids (1920), under a State law.²

Minnesota. A joint school for the deaf and the blind was opened at Faribault in 1863. In 1866, a separate institution, the Minnesota School for the Blind, was created. It is directed by the State board of public welfare.³ There are day schools at Minneapolis (1919), St. Paul (1919), Duluth (1919), and St. Cloud (1928), all operating under a State law.⁴ Provision is made for higher education.⁵

Mississippi. The Mississippi School for the Blind was established at Jackson in 1848. It is governed by a board of trustees.⁶ Colored children are provided for at a general private institution (Piney Woods Country Life School).

Missouri. The Missouri School for the Blind was established at St. Louis in 1851, a private school having been begun the year before. It is under a board of managers, and is visited by the State department of public welfare.⁷ Provision is made for day schools.⁸ Provision is made for higher education.⁹

¹ Laws, 1848, pp. 246, 463; 1849, pp. 137, 327; 1850, pp. 30, 334; 1853, p. 119; 1855, p. 239; 1857, pp. 185, 216; 1865, p. 318; 1867, p. 128; 1873, p. 145; 1875, p. 109; 1877, p. 211; 1879, p. 257; 1881, pp. 5, 69, 226, 274; 1887, no. 286; 1891, no. 169; 1893, no. 123; 1897, nos. 233, 258; 1907, nos. 116, 202; 1915, no. 240; 1917, no. 148; 1919, nos. 13, 257; 1921, no. 307; 1927, no. 319; Comp. Stat., 1929, §§ 7546-7556; 7984-7996. The school was called the Asylum for the Deaf and Dumb and Blind until 1870, when it became the Institution for the Education of the Deaf and Dumb and the Blind. It received its present name in 1880. Until 1857 the institution for the deaf and the blind and the asylum for the insane were under a single board of directors. In 1901 a joint board was created for the schools for the deaf and the blind, which continued for a time.

² Laws, 1923, ch. 122; 1927, ch. 273; 1931, no. 244.

³ Laws, 1858, p. 175; 1863, ch. 9; 1864, ch. 71; 1865, ch. 5; 1866, ch. 30; 1867, ch. 12; 1868, ch. 17; 1874, ch. 18; 1875, ch. 95; 1879, ch. 31; 1881, ch. 145; 1887, ch. 207; 1888, ch. 205; 1901, chs. 122, 170; 1902, ch. 83; 1907, ch. 385; 1909, ch. 306; 1917, ch. 346; 1919, ch. 69; Stat., 1927, §§ 4401, 4447, 4610-4617. Until 1880 the school was called the Asylum for the Deaf and Dumb and Blind; until 1887, the Institution for the Deaf, Dumb and Blind; and until 1902, the Institute for Defectives. In 1879 feeble-minded children were admitted into the school, and in 1881 a department for them was created, which continued till 1902. Up to 1917 the school for the blind, with the school for the deaf, was under a board of trustees. It is also visited by a board of visitors.

⁴ Laws, 1915, ch. 194; 1917, ch. 346; 1919, ch. 129; 1921, ch. 366; 1923, ch. 409; Stat., § 2895.

⁵ Laws, 1915, ch. 307; 1919, ch. 367.

⁶ Code, 1848, p. 237; 1857, p. 167; 1871, p. 459; Laws, 1848, p. 153; 1854, p. 95; 1857, pp. 42, 116; 1924, ch. 309; 1932, ch. 115; Ann. Code, 1927, §§ 6592-6601, 6607, 6608. Until 1870 the school was called the Asylum for the Blind, and until 1924 the Institute. For several years after the Civil War blind children were sent to Louisiana for education.

⁷ Rev. Stat., 1856, p. 210; Laws, 1851, p. 59; 1870, p. 21; 1874, p. 176; 1907, p. 305;

⁸ Laws, 1919, p. 679.

⁹ Laws, 1921, p. 645; Rev. Stat., §§ 9700-9702.

Montana. Before the establishment of a school, blind children were sent to other States for education. In 1893 the Montana School for the Deaf and the Blind was opened at Boulder. It is under the State board of education, with a local executive board, and is visited by the State department of public welfare.¹

Nebraska. Before the founding of a school, pupils were sent to schools in other States. The Nebraska School for the Blind was established at Nebraska City in 1875. It is governed by the State department of public welfare.²

Nevada. Since 1869 blind children have been sent to the schools in adjoining States, the State department of education contracting for them.³

New Hampshire. In 1832 the State commenced to send its blind children to the school in Massachusetts, which policy is still continued. The Governor and council have control of their education, with supervision by the State department of public welfare.⁴

New Jersey. In 1836 the State commenced to send its blind children to the schools in New York and Pennsylvania, which policy is still pursued. Their education is in charge of the State department of public welfare, under the immediate direction of a special agency for the blind.⁵ There are day schools in Newark (1910), Jersey City (1911), Paterson (1923), and Elizabeth (1930), operating under a State law.⁶ Provision is made for higher education.⁷

New Mexico. The New Mexico School for the Blind was founded in 1903 at Alamogordo. It is directed by a board of trustees.⁸

1909, pp. 574, 770; 1911, p. 136; 1915, p. 207; 1917, p. 192; 1919, p. 683; 1921, p. 645; Rev. Stat., 1929, §§ 212, 9689-9711. In 1876 the name was changed from the Asylum for the Blind to the Institution for the Blind. The present name was given in 1881.

¹ Rev. Stat., 1879, p. 512; Comp. Stat., 1887, p. 917; Laws, 1885, p. 49; Code, 1895, §§ 2330-2371; Laws, 1893, p. 181; 1897, p. 94; 1903, chs. 9, 10, 25; 1909, p. 207; 1913, ch. 76; Rev. Code, 1921, §§ 1456-1473. The name of the school was changed in 1901 from the Deaf, Dumb and Blind Asylum. Since 1909 there has been a department for the feeble-minded in connection with the school. The Governor, Secretary of State, and Attorney-General formerly constituted the commissioners of the school.

² Rev. Stat., 1866, p. 374; Laws, 1875, p. 146; 1877, pp. 177, 188; 1881, ch. 78; 1897, p. 202; 1901, p. 454; 1903, p. 549; 1905, p. 575; 1907, p. 430; 1909, p. 475; 1913, p. 537; 1915, p. 293; 1919, p. 346; 1921, p. 228; Comp. Stat., 1931, §§ 75-1511, 79-1903, 83-301-310. In 1913 the name was changed from the Institute for the Blind. Until 1913 the schools for the blind and the deaf were under a joint board.

³ Laws, 1869, ch. 103; 1905, p. 253; 1907, p. 371; Comp. Laws, 1929, §§ 2310-2312.

⁴ Laws, 1819, p. 256; 1836, p. 256; 1875, p. 489; 1879, ch. 58; 1899, ch. 99; 1905, ch. 106; 1913, ch. 117; Pub. Laws, 1925, p. 421.

⁵ Laws, 1819, p. 245; 1836, p. 305; 1837, p. 79; 1843, p. 59; Rev. Stat., 1846, p. 406; Laws, 1873, p. 45; 1875, p. 11; 1893, p. 327; 1904, p. 268; 1910, pp. 211, 330, 537; 1915, ch. 297; 1918, ch. 281; Comp. Stat., 1910, pp. 457, 1896-1902. In 1875 the establishment of a State school was proposed.

⁶ Laws, 1910, ch. 126; 1911, p. 513; 1918, p. 109; 1921, ch. 239; 1928, ch. 53.

⁷ Laws, 1912, ch. 336; Comp. Stat., Supp. 1915, p. 1455.

⁸ Laws, 1903, ch. 2; 1907, ch. 4; 1915, ch. 33; 1917, ch. 115; 1925, ch. 13; Stat., 1929, §§ 120-2261-2264, 130-401-406. An effort was made to establish a school in 1892. Until 1925 the title was Institute.

New York. The New York Institute for the Education of the Blind was opened in New York City in 1832 as a private corporation. In 1834 the State began to make appropriations for it. It is governed by a board of managers.¹ A second school, the New York State School for the Blind, was opened at Batavia in 1868. It is strictly a State institution, and is controlled by a board of managers.² Both schools are related to the State department of education, with visitation by the State department of public welfare.³ Day schools are in operation, under State law, in New York (1909) and Buffalo (1918).⁴ Provision is made for higher education.⁵

North Carolina. A joint school for the blind and the deaf was established at Raleigh in 1845, though the blind did not enter till 1851. In 1893 the white deaf were removed, leaving the blind, with a department for the colored blind and deaf. The institution is now known as the State School for the Blind and the Deaf, and is directed by a board of directors, with supervision by the State departments of education and public welfare.⁶ Provision is made for higher education.⁷

North Dakota. The North Dakota School for the Blind was opened at Bathgate in 1908, before which time blind children were sent to the schools in other States. It is under the State department of public welfare.⁸

Ohio. The Ohio State School for the Blind was established at Columbus in 1837. It is governed by the State department of educa-

¹ Laws, 1831, ch. 214; 1834, chs. 40, 316; 1835, ch. 42; 1836, chs. 226, 399; 1839, ch. 200; 1841, ch. 175; 1845, chs. 43, 140; 1848, ch. 193; 1852, ch. 333; 1855, ch. 539; 1859, ch. 278; 1862, ch. 351; 1864, chs. 386, 555. In 1912 the name was changed from the New York Institution for the Blind.

² Laws, 1865, ch. 587; 1867, ch. 744; 1872, chs. 104, 616; 1873, ch. 463; 1886, ch. 663; 1895, ch. 563; 1908, ch. 433. In 1895 the name of the school was changed from the State Institution for the Blind. The site of the school from 1865 to 1868 was Binghamton.

³ Laws, 1870, ch. 166; 1871, ch. 166; 1874, ch. 226; 1875, chs. 213, 567; 1877, ch. 413; 1882, ch. 410; 1886, ch. 615; 1894, chs. 229, 556; 1895, ch. 771; 1896, ch. 546; 1903, chs. 62, 223; 1911, ch. 710; 1912, chs. 60, 223; 1917, ch. 179; 1919, chs. 136, 297; 1920, ch. 110; 1922, ch. 327; 1923, ch. 163; 1925, ch. 227; 1926, ch. 544; 1927, ch. 153; Cons. Laws, 1930, pp. 706-710. In 1919 an educational status was given the schools.

⁴ Laws, 1917, ch. 559; 1918, ch. 378; 1924, ch. 193; 1925, ch. 227; Cons. Laws, p. 711.

⁵ Laws, 1907, ch. 608; 1913, ch. 175; 1923, ch. 1630; Cons. Laws, p. 1020.

⁶ Laws, 1844, ch. 37; 1846, ch. 48; 1848, chs. 4, 5; 1850, chs. 4, 5; 1852, ch. 48; Rev. Code, 1854, ch. 6; Laws, 1869, ch. 154; 1870, ch. 35; 1872, ch. 134; 1876, ch. 156; 1879, ch. 332; 1881, ch. 211; 1889, ch. 539; 1893, chs. 69, 137; 1895, ch. 461; 1899, chs. 1, 311, 540; 1901, chs. 4, 210, 627, 707; 1903, ch. 69; 1905, ch. 67; 1908, chs. 69, 141; 1911, ch. 212; 1915, ch. 14; 1917, chs. 20, 35, 150, 258; 1921, ch. 189; 1923, ch. 136; 1925, ch. 306; 1927, ch. 80; Cons. Stat., 1924, §§ 5764, 5765, 5872-5887. In 1905 the name of the school was changed from the Institution for the Education of the Deaf, Dumb and Blind. In 1869 colored deaf and blind children were admitted, and in 1872 a department was created for them.

⁷ Laws, 1921, ch. 152; Cons. Stat., 5887a.

⁸ Laws, 1890, ch. 182; 1895, ch. 24; 1899, ch. 86; 1911, chs. 62, 97; 1913, chs. 65, 95; 1927, ch. 102; Comp. Laws, 1913, §§ 243, 1195, 1342, 1699-1708, 10174. A school was planned in 1895. In 1911 the name of the school was changed from the Asylum for the Blind. Until 1911 the school was under a special board of trustees.

tion, with inspection by the department of public welfare.¹ There are day schools at Cincinnati (1905), Cleveland (1909), Toledo (1915), and Youngstown (1920), operating under a State law.² Provision is made for higher education.³

Oklahoma. A private school was opened at Fort Gibson in 1897, to which public aid was granted. In 1907 it was taken over by the State, being removed to Wagoner, in 1908 back to Fort Gibson, and in 1913 established at Muskogee. The Oklahoma School for the Blind is governed by the State department of education. In 1909 the Industrial Institute for the Deaf, Blind, and Orphans of the Colored Race was created at Taft. It is directed by a board of trustees, with the State department of public welfare.⁴

Oregon. The Oregon State School for the Blind was established at Salem in 1873. It is directed by the State department of public welfare.⁵ Provision is made for higher education.⁶

Pennsylvania. The Pennsylvania Institution for the Instruction of the Blind was established at Philadelphia in 1833. It is a private corporation under a board of managers. It has received State appropriations from the beginning.⁷ The Western Pennsylvania School was established at Pittsburgh in 1890. It is also a private corporation, under a board of directors, and similarly aided by the State.⁸ Both these schools are related to the State department of education, with

¹ Laws, 1837, p. 116; 1838, p. 49; 1843, pp. 57, 416; 1846, p. 111; 1851, p. 110; 1852, p. 194; 1856, pp. 42, 96; 1861, p. 40; 1866, pp. 64, 170; 1874, p. 87; 1876, pp. 111, 246; 1878, p. 150; 1880, p. 75; 1885, p. 227; 1888, p. 192; 1889, p. 337; 1890, p. 80; 1891, p. 356; 1892, p. 381; 1893, p. 289; 1894, p. 97; 1898, pp. 151, 212; 1902, pp. 273, 620; 1904, p. 549; 1908, p. 80; 1910, p. 156; 1911, p. 211; 1913, p. 175; 1917, p. 376; 1919, p. 26; 1921, p. 105; 1927, p. 358; 1929, p. 248; Ann. Gen. Code, 1931, §§ 154-46, 1835, 1842, 1875, 1884-1889, 2846, 3360, 4441, 7763-7765, 7778, 7795. In 1902 the name of the school was changed from Institution for the Education of the Blind. Until 1911 the school was in the hands of a special board of trustees, and until 1927 under the State department of public welfare. From 1852 to 1856 a single board directed the schools for the deaf and the blind and the asylum for the insane.

² Laws, 1913, p. 270; 1914, p. 232; 1917, p. 153; 1920, p. 1280; 1921, p. 257; 1923, p. 28; 1925, p. 26; Ann. Gen. Code, §§ 7755-7761a, 7848-1.

³ Laws, 1913, p. 474; Ann. Gen. Code, § 1885-1.

⁴ Laws, 1897, ch. 16; 1899, p. 220; 1908, p. 632; 1909, p. 546; 1911, p. 120; 1913, p. 72; Stat., 1931, §§ 5249-5253, 5268-5272, 9078-9082. The first school was known as the Lura A. Lowrey School, and later as the International School for the Blind. At the beginning the Governor was authorized to contract for the education of the blind, this after a time being placed with the regents of the State university.

⁵ Laws, 1872, p. 102; 1874, p. 90; 1876, p. 63; 1891, p. 138; 1907, chs. 79, 116; 1913, pp. 119, 130, 683; 1920, ch. 6; 1921, ch. 179; 1929, ch. 420; Code, 1930, §§ 35-416, 35-1208, 35-2112; 35-4301-35-4307, 4309, 49-1605. Until 1907 the school had the name of the Institute for the Blind. Until 1913 it was in the hands of special trustees. The school was privately conducted for a short time at the beginning. There was a private school in Portland from 1889 to 1894.

⁶ Laws, 1923, ch. 177; 1933, ch. 259.

⁷ Laws, 1821, p. 393; 1833, p. 16; 1835, p. 328; 1836, p. 43; 1837, p. 395; 1876, p. 138.

⁸ Until 1923 the title was Institution.

supervision by the department of public welfare.¹ There is a day school at Johnstown (1925), operating under a State law.² Provision is made for higher education.³

Rhode Island. Since 1845 blind children have been sent to the school in Massachusetts. The State department of education has charge.⁴

South Carolina. In 1834 provision was made for the education of some blind children at the school in Massachusetts. In 1849 a private school for the deaf was started at Cedar Springs, in which in 1855 the blind were allowed to enter, and which in 1857 was taken over by the State. It is now known as the School for the Deaf and the Blind, and is under a board of commissioners.⁵ Provision is made for higher education.⁶

South Dakota. Before the opening of a State institution blind children were sent to other States for education. The South Dakota School for the Blind was established at Gary in 1899. It is under the direction of the State department of public welfare.⁷

Tennessee. A private school was opened at Nashville in 1843, which was taken over by the State two years later. The Tennessee School for the Blind is in the hands of the State department of public welfare.⁸

Texas. The Texas School for the Blind was founded in 1856 at Austin. The Deaf, Dumb and Blind Institution for Colored Youths was established in 1887 in the same city. The schools are under the State board of public welfare.⁹

¹ Laws, 1887, p. 271; 1909, ch. 356; 1911, p. 383; 1919, p. 196; 1921, p. 393; 1923, ch. 362; 1925, ch. 48; Stat. Cons., 1928, pp. 1921, 2961. Educational oversight was given in 1923.

² Laws, 1911, ch. 329; 1919, ch. 1090; 1921, ch. 1066; 1925, ch. 70; Stat. Cons., pp. 4743, 5042.

³ Laws, 1917, ch. 406; 1921, ch. 407; 1925, ch. 74; Stat. Cons., p. 5069.

⁴ Laws, 1845, p. 92; Rev. Stat., 1857, p. 158; Gen. Stat., 1872, p. 167; Pub. Stat., 1882, p. 207; Laws, 1892, p. 345; 1893, ch. 1175; 1896, ch. 322; 1913, ch. 945; 1920, ch. 1879; 1929, ch. 1341; Gen. Laws, 1923, §§ 1656-1661. Appointments are made by the Governor.

⁵ Laws, 1834, ch. 6; 1847, p. 436; 1848, p. 524; 1852, ch. 12; 1871, p. 609; 1878, p. 706; 1894, p. 748; 1902, p. 1026; 1914, p. 947; 1915, p. 64; Code, 1932, §§ 3094, 5684-5695; Crim. Code, § 2000. In 1894 the name was changed from the Institution for the Education of the Deaf, Dumb and Blind to the Institution for the Education of the Deaf and Blind. The present name was given in 1923. A department for the colored was created in 1883.

⁶ Laws, 1910, p. 917; Code, § 5693.

⁷ Laws, 1879, ch. 13; 1881, ch. 56; 1885, ch. 21; 1890, ch. 5; 1891, ch. 131; 1895, chs. 30, 31; 1899, ch. 5; 1901, ch. 63; 1907, chs. 137, 140; 1909, chs. 29, 177; 1911, ch. 140; 1913, ch. 187; 1923, ch. 290; 1931, ch. 247; Comp. Laws, 1929, §§ 5504-5510, 5497. In 1903 the name was changed from Blind Asylum. There is also a visiting committee for the school.

⁸ Laws, 1843, ch. 195; 1845, ch. 157; 1857, ch. 68; Code, 1858, p. 336; Laws, 1859, chs. 19, 69, 123; 1867, p. 301; 1870, ch. 54; 1871, chs. 67, 121; 1877, ch. 49; 1881, ch. 109; 1883, ch. 145; 1915, ch. 20; 1923, ch. 7; 1927, ch. 19; Code, 1931, §§ 2443-2452, 4535-4546. Until 1871 the name was Institution for the Blind. A department for the colored was created in 1881. Until 1915 the school was under a special board of trustees.

⁹ Laws, 1856, p. 66; 1866, p. 66; 1875, pp. 66, 91; 1876, p. 35; 1883, pp. 103, 109; 1887, p. 150; 1895, p. 63; 1899, p. 318; 1901, p. 20; 1905, p. 47; 1913, p. 191; 1915, p. 36; 1929,

Utah. A school for the deaf was opened at Salt Lake City in 1884, in which in 1896, on its removal to Ogden, a department was created for the blind. The Utah School for the Deaf and the Blind is controlled by a board of trustees.¹

Vermont. In 1833 the State began sending its blind children to the school in Massachusetts, which policy has been continued. The State department of public welfare has charge. From 1912 to 1917 there was a department for the blind in a private school, the Austine Institution for the Deaf and Blind, at Brattleboro.²

Virginia. The Virginia School for the Deaf and Blind was established at Staunton in 1839. In 1918 provision was made for a separate institution, at Charlottesville. The Virginia State School for Colored Deaf and Blind Children was created at Newport News in 1910. Both these schools are in the hands of boards of trustees, with relation to the State commission for the blind, and subject to inspection by the State department of public welfare.³

Washington. Prior to the opening of a school in the State, blind children were sent to Oregon for education. In 1886 a joint institution for the deaf and the blind was established at Vancouver. In 1913 a separate institution, the Washington State School for the Blind, was created. It is directed by the State department of public welfare.⁴ There is a day school at Seattle (1921), under a State law.⁵

West Virginia. Before the creation of a school in the State, blind children were sent to Virginia and Ohio for education. In 1870 the West Virginia School for the Deaf and the Blind was established at Romney. In 1926 the State School for Colored Deaf and Blind was

ch. 21; Comp. Stat., 1928, §§ 3174-3183, 3202-3207, 3221-3222. Until 1905 the name was Asylum for the Blind, when it became the Institution for the Blind. The present name was received in 1915. For a time the school was affiliated with the State university. From 1915 to 1929 it was under a special board of trustees. A day school was in operation in Houston from 1917 to 1928.

¹ Laws, 1894, p. 19; 1896, pp. 100, 135, 475; 1897, pp. 36, 116; 1903, p. 51; 1907, pp. 59, 84, 119; 1911, p. 138; 1919, ch. 300; 1925, ch. 6; 1931, ch. 8; Comp. Stat., 1917, §§ 5319-5324. Until 1907 the name was the State School for the Deaf, Dumb and Blind.

² Laws, 1825, no. 21; 1833, no. 21; 1841, no. 22; 1842, no. 16; 1845, no. 15; 1858, no. 3; 1861, no. 34; 1872, no. 19; 1880, no. 124; 1884, no. 39; 1892, no. 27; 1898, no. 29; 1906, nos. 55-57; 1908, p. 48; 1910, p. 84; 1915, p. 166; 1917, no. 32; 1921, no. 61; 1923, nos. 7, 36; Gen. Laws, 1917, §§ 1409, 1423. Formerly the Governor acted as commissioner.

³ Laws, 1838, ch. 19; 1839, p. 205; 1849, p. 385; 1855, p. 81; 1874, p. 175; 1879, p. 203; 1896, p. 770; 1898, p. 276; 1900, p. 208; 1902, pp. 75, 408, 808; 1906, ch. 164; 1918, chs. 310, 334; 1920, ch. 85; 1922, ch. 334; 1924, chs. 183, 419; Code, 1930, §§ 622, 670-678, 689, 697. In 1898 the name was changed from the Institution for the Deaf and Dumb and the Blind.

⁴ Laws, 1886, p. 136; 1888, p. 87; 1890, p. 497; 1897, p. 443; 1899, pp. 130, 326; 1901, p. 250; 1903, pp. 151, 266; 1905, p. 254; 1907, p. 378; 1909, p. 258; 1913, p. 6; Comp. Stat., 1922, §§ 4508, 4644, 4654, 10899-10903. Until 1905 the school had a department for the feeble-minded, and was known as the School for Defective Youth. Until 1901 the school was under a special board of trustees.

⁵ Laws, 1909, p. 293; Comp. Stat., § 4805-1.

established at Institute. Both schools are under the State department of education.¹

Wisconsin. The Wisconsin School for the Blind was established at Janesville in 1849. It is directed by the State board of public welfare.² There is a day school at Milwaukee (1907), operating under a State law.³ Provision is made for higher education.⁴

Wyoming. Since 1886 blind children have been sent to the schools in neighboring States for education. The State department of education is in charge.⁵

¹ Laws, 1868, ch. 71; 1870, ch. 116; 1871, ch. 71; 1887, ch. 52; 1895, ch. 39; 1897, ch. 25; 1901, ch. 60; 1908, ch. 27; 1909, ch. 58; 1919, chs. 2, 11; Code, 1930, pp. 497, 498, 511, 512, 597, 679. In 1887 the name of the school was changed from the Institution for the Deaf, Dumb, and Blind. Until 1909 control was vested in a special board. Colored children were formerly sent to Maryland for education.

² Laws, 1850, chs. 28, 218; 1852, ch. 296; 1858, ch. 102; Rev. Stat., 1858, p. 1004; Laws, 1859, ch. 39; 1862, ch. 207; 1865, ch. 538; 1866, ch. 105; 1867, ch. 1; 1871, ch. 136; 1880, ch. 229; 1881, ch. 298; 1882, ch. 15; 1883, ch. 268; 1891, ch. 331; 1895, ch. 39; 1897, ch. 25; 1917, ch. 418; 1919, ch. 81; Stat., 1931, §§ 39.10, 47.01-47.03, 68.08. The name of the school was changed in 1883 from the Institute for the Education of the Blind. Until 1881 it was under a special board of trustees.

³ Laws, 1907, ch. 551; 1909, ch. 199; 1913, ch. 772; 1915, ch. 578; 1917, chs. 280, 343; 1921, ch. 338; Stat., §§ 20.32, 41.01. Day schools were in operation at Antigo from 1910 to 1912, in Bloomington from 1911 to 1913, and in Racine from 1909 to 1928.

⁴ Laws, 1917, ch. 581; Stat., § 47.07.

⁵ Laws, 1886, ch. 77; 1890, ch. 15; 1893, ch. 32; 1895, ch. 25; 1907, ch. 10; 1921, ch. 135; 1929, chs. 135, 160; Rev. Stat., 1931, §§ 108-701-703. Until 1929 the State department of public welfare was in charge. In 1897 it was provided that when there are as many as twelve applicants, a State school for the deaf and the blind may be established at Cheyenne.

NOTE TO CHAPTER XXVII.—In the several American possessions—Alaska, Porto Rico, the Panama Canal Zone, the Hawaiian Islands, and the Philippine Islands—schools for blind children have been established. See Report of United States Commissioner of Education, 1909, p. 301; 1913, p. 657; Proceedings of National Conference of Charities and Correction, 1895, p. 322; Report of Department of Interior, 1908, pp. 274, 278; L. S. Rand, "Directory of Activities for Blind in United States," 1932; White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 86.

CHAPTER XXVIII

CONSTITUTIONAL PROVISIONS FOR SCHOOLS FOR BLIND

EXTENT OF PROVISIONS

In all the States of the Union the education of the blind has been effectually accomplished by statutory action on the part of the legislatures. But in certain ones, to render this a formal and permanent duty, there have been incorporated in the organic law provisions requiring such bodies to give due heed to the matter. Attention of this kind has been demonstrated not to be necessary in actual practice for the support and continuance of the schools for the instruction of the blind; while it may be argued that the organic law should confine itself only to fundamental principles of government, leaving the working out of details, as they arise, to the chosen representatives of the people. Yet, however it be considered, the inclusion in express terms of the regard by the state for the education of the blind is quite commendable, and bespeaks a praiseworthy solicitude for their welfare.

These constitutional provisions relating to the blind are found in twenty-nine States: Alabama, Arizona, Arkansas, Colorado, Florida, Idaho, Indiana, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Texas, Utah, Virginia, Washington, and West Virginia. The provisions are more direct in some States than in others, and vary from a specific command to a mere incidental reference. In most instances they refer both to the care and to the education of the blind, though they are evidently intended to mean mainly the latter.¹

The first State to make reference in its Constitution to the education of the blind was New York in 1846. Michigan, however, in 1850 was the first State to provide directly for their education as a requirement on the part of the legislature. It was followed in 1851 by Indiana and Ohio. Of the different States adopting Constitutions, new or revised, since 1846, over two-thirds have made reference of some kind to the blind, the remainder having failed to do so. Of the States adopt-

¹ The Constitutions of most of the States of the United States provide for the education of all their children—a provision which could well embrace the blind. In some of the States, furthermore, there are requirements for the establishment of charitable, reformatory, and similar institutions, among which schools for the blind might perhaps also be included.

ing Constitutions since 1889, over three-fourths have made such provision.¹ It thus appears that the more recent a Constitution, the more likely it is to have a provision respecting the blind. For a number of the States without such a reference, it is to be observed that their Constitutions date far back in our National history, and were adopted before attention was called to the needs of this class. Hence in general it is not to be concluded from the mere presence of constitutional mention that certain States are more regardful of the educational welfare of the blind than are others.

LANGUAGE AND FORMS OF PROVISIONS

The language of the provisions of the Constitutions in respect to schools for the blind varies considerably, as has been stated.² In practically every case the blind are coupled with the deaf; and unless the reference is included in an article concerned with educational matters, the insane, and perhaps other classes, are likely to be provided for in the same clause. In several instances there is more than one reference to schools for the blind.³

The most common statement is that institutions for the blind, the deaf, and the insane shall be fostered and supported, or shall be established and maintained, by the State. Such is the case in the Constitutions of Arizona,⁴ Colorado,⁵ Florida,⁶ Idaho,⁷ Kansas,⁸ Michigan,⁹ Montana,¹⁰ Nevada,¹¹ Ohio,¹² South Carolina,¹³ Utah,¹⁴ and Washington.¹⁵ In the Constitution of South Carolina the school is also declared

¹ In the Constitutions of some of the States, as Florida, Kansas, Louisiana, Michigan, Mississippi, New York, and South Carolina, there were provisions in the preceding as well as in the present drafts.

² In the Constitutions no reference is made to the blind other than in relation to schools, except in that of Mississippi, where they are exempted from a certain tax, in that of Missouri, where a pension system is authorized for them, in that of Georgia, where a pension for blind war veterans is permitted, and in that of Kentucky, where the right of suffrage of the blind is guaranteed.

³ In these constitutional provisions the reference is as a rule found under some general head, as "public institutions," "State institutions," "miscellaneous," or the like. Under the heading of "education" are the provisions in the Constitutions of Arizona (one clause), Colorado (as an amendment), Michigan, Mississippi, New Mexico, Oklahoma (one clause), South Carolina (as an amendment), Texas (though under sub-title "charitable"), Utah, Virginia, and West Virginia.

⁴ Art. XI, sec. 1; Art. XXIII, sec. 15.

⁵ Art. VIII, secs. 1, 5 (as amended).

⁶ Art. XIII, sec. 1.

⁷ Art. X, sec. 1.

⁸ Art. VII, sec. 1.

⁹ Art. XI, sec. 15.

¹⁰ Art. X, sec. 1; Art. XII, sec. 12.

¹¹ Art. XIII, sec. 1.

¹² Art. VII, sec. 1.

¹³ Art. II, sec. 8 (as amended); Art. X, sec. 4; Art. XII, sec. 1.

¹⁴ Art. X, secs. 3, 10; Art. XIX, secs. 2, 3. (The first named section is the result of an Amendment adopted by a popular vote of 73,796 to 47,336.)

¹⁵ Art. XIII, sec. 1.

to be exempt from taxation, and to be included among the educational institutions of the State, the latter provision entitling it to the scholarships which are created from the lands granted by the National Government. In the Constitution of Utah a further provision establishes the location of the school, with the transfer of its property from the State university, and guarantees against diversion the lands bestowed by the United States Government. In the Constitution of Colorado the school is listed among the institutions declared to be the property of the State, and is acknowledged to be an educational institution.

In the Constitutions of a smaller number of States it is declared in effect to be the duty of the legislature to provide by law for the support of institutions for the education of the deaf and the blind, and for the insane. These States are Arkansas,¹ Indiana,² Mississippi,³ and Oklahoma.⁴

The Constitutions of the remaining States have less direct or authoritative references to the blind. In that of West Virginia the legislature "may make suitable provision for the blind, mute, and insane whenever it may be practicable."⁵ In the Constitution of North Carolina the matter seems similarly to be left to the discretion of this body.⁶ In the Constitution of Minnesota mention is made of land bestowed upon the school, and the public debt is authorized to be increased for the purpose of establishing certain institutions, including a school for the blind and the deaf.⁷ In that of South Dakota the several charitable institutions of the State are enumerated, among which are schools for the deaf and for the blind, while direction is also given for the sale of the land held for the benefit of the school.⁸ In that of New Mexico the school for the blind is enumerated among the educational institutions of the State, reference also being made to the public land held by it.⁹ In that of Virginia the school is mentioned in connection with the composition of the State board of education.¹⁰ In that of Nebraska it is provided that among the duties of the Governor is the appointment of a board of commissioners for State institutions, in which is listed the school.¹¹ In that of Texas a permanent fund is provided from the

¹ Art. XIX, sec. 19.

² Art. IX, sec. 1.

³ Art. VIII, sec. 209.

⁴ Art. XIII, sec. 1; Art. XXI, sec. 1.

⁵ Art. XII, sec. 12.

⁶ Art. XI, sec. 10.

⁷ Art. VIII, sec. 2; Art. IX, sec. 14a (as amended).

⁸ Art. XIV, sec. 1.

⁹ Art. XII, sec. 11.

¹⁰ Art. IX, sec. 130.

¹¹ Art. V, sec. 19.

lands which had been given to the school by the State.¹ In that of North Dakota the school is permanently located, and it is provided that 30,000 acres of the public land donated be set apart for its benefit.² In that of Alabama the legislature is expressly forbidden to change the location of the school unless by a two-thirds vote.³ In the Constitution of New York the provisions have reference to the subsidies granted to private institutions, it being declared that "nothing in the Constitution shall prevent the legislature from making such provision for the education of the blind, the deaf and dumb, and juvenile delinquents . . . as it may deem proper," and that the legislature is not to be prohibited from action by the provision that the credit or land of the State may not be "given to private associations, corporations, and undertakings."⁴ In the Constitution of Massachusetts it is provided that nothing therein shall prevent the Commonwealth from paying to privately controlled institutions for the blind and the deaf sums which are not greater than ordinary and reasonable compensation for their care and support.⁵ In the Constitution of Louisiana provisions forbidding appropriations for religious, charitable, private, or benevolent organizations are not to apply to schools for the blind and the deaf; the schools "are declared to be higher institutions of learning," under the State board for such institutions, while certain sums are to be appropriated for their support.⁶

¹ Art. VII, sec. 9.

² Art. XIX, sec. 216; Amendment, Art. X. (An amendment to the Constitution authorizing a change in the name of the school was adopted by a popular vote of 42,365 to 21,799.)

³ Art. XIV, sec. 267.

⁴ Art. VII, secs. 9, 14.

⁵ Art. XLIV, sec. 3 (Amendment).

⁶ Sec. 53; Art. XII, sec. 9.

CHAPTER XXIX

QUESTION OF CHARITY CONNECTION OF SCHOOLS

SCHOOLS SOMETIMES REGARDED AS EDUCATIONAL: SOMETIMES AS CHARITABLE

In considering the relation of the state to its schools for the blind, the question is raised as to the manner in which they are regarded by it. This is to be determined by the form of attention which they have received, or by the classification adopted in respect to them. We find that in a number of States the schools are held to be to a greater or less extent charitable—or at least as a “public institution,” or under the State department of public welfare or like body, in a different category from regular educational institutions. The further question is presented as to whether this is the proper and just attitude.

In times past the conception that has largely prevailed has been the charitable one. In later days, however, the view has been more and more widely entertained that the schools should be considered essentially as educational institutions. Although it is not easy to discover with exactness the treatment accorded to the schools in the different States, the lines in some shading off one into the other, it would nevertheless appear, from what has been said in the preceding chapters, and also from certain legislative designations, that in somewhat more than half the States the schools are now regarded largely if not entirely as educational: Alabama, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Washington, West Virginia, and Wyoming. In the remaining States the institutions seem to be regarded as charitable in greater or less degree, either from their connection with certain State agencies or from some other classification. In some cases the schools are recognized as educational, but at the same time are not held altogether free from the charitable touch.¹

¹ The institutions are designated as educational in the Constitutions of Michigan, Louisiana, Oklahoma, and Virginia. In certain States also, as we have seen, the State superintendent of public instruction is a member *ex-officio* of the governing board, or report is made to, or inspection is made by, the department of education. In some States the institutions are expressly declared by law to be educational. In a number of cases an educational classification is found now and then in statutory references or captions. In

To ascertain the true attitude of the state in this respect, we may perhaps best have recourse to the final authority in America for the determination of such matters—namely, the courts of law. The question has been passed upon judicially in a number of cases. In some of these the institutions for the blind are held to be charitable, and in others educational.

The most important decision of the first kind is that of *People ex rel. New York Institution for the Blind v. Fitch*,¹ which came up in New York in 1897. Here the provision of the statute was attacked which allowed the State board of charities to inspect the school. It was held by the Court that this board had the right to inspect. The ground was adopted that though the institution was partly educational, and was visited by the State department of education, yet the word "charitable" as found in the law was to be taken in its usual signification; and that if the institution as a private body educated, clothed, and maintained indigent pupils, it was in fact charitable.

Some years later, in 1922, in the same State in the case of *Newton v. Lewis*,² there was new challenge of the powers of the State board of charities with respect to schools for the blind, this time the State school. Here there was an application for a mandamus to require written reports of the special board of trustees to the State board of charities as to visits by the former board, its meetings, and the minutes of these meetings, it being contended by it that the law simply gave the latter board the right to "visit and inspect." The court declared that, though the Constitution and the most recently adopted law provided only for visitation and inspection, yet the school was recognized to an extent as charitable, and that the powers of the board of charities with regard to it should be conceived as general and broad, these embracing certain inherent and natural powers, and whatever other powers were reasonably incidental to its complete functioning.

Another case passed upon by the court in which the school for the blind is regarded as charitable is that of *State v. Bacon*,³ which came up in Nebraska in 1877. Here it was decided that the State school was to

South Carolina the department of public welfare is expressly forbidden to have connection with the school. On this subject, see *American Annals of Deaf*, xlviii., 1903, p. 348; lviii., 1913, p. 327.

¹ 154 N. Y., 14, 47 N. E., 983; reversing 16 Misc., 464, 39 N. Y. Supp., 926. On this case, see also Report of New York Institute, 1897, p. 15; Report of New York State Board of Charities, 1897, pp. 101, 359; Correspondence and Statement Relating to Specific Educational Purposes and Proper Classification of New York Institution for Blind, 1896. See, in addition, *American Asylum v. Phoenix Bank*, 4 Conn., 172, 10 Am. Dec. 112 (1822).

² 193 N. Y. Supp., 438, 118 Misc., 382; 196 N. Y. Supp., 711, 203 App. D., 395. As a result of this decision, there was proposed an Amendment to the Constitution of the State, which would remove from the State board of charities its connection with the school for the blind. Laws of New York, 1923, p. 1760.

³ 6 Neb., 286.

a greater extent charitable than educational, and hence properly came under the direction of the appropriate State body.

Of the two decisions holding the school for the blind to be educational, one is also found in Nebraska. This is the case of *Curtis v. Allen*¹ in 1895, where an action had been brought by certain pupils of the school to compel the board of public lands and buildings to reverse its ruling that they could not remain thereat during the vacation period, this having been denied them on the ground that the school was educational only, and could not receive pupils at such a time. This view the Court adopted. The remaining decision is that of *State v. Bryan*,² which came up in Florida in 1905, involving jurisdiction as to the State school for the deaf and the blind. The Court held that this institution was educational, and was properly under the board directing the educational institutions of the State.³

CHARITY IN CONNECTION WITH SCHOOLS FOR BLIND

Charity may be said to include the treatment by the state of various elements of its population, no less than the general treatment by organized society of such of its members as may in one way or another be incapacitated or in need of special aid. In a sense it is expressed in the system of public education of children, this being nothing less than charity in its best sense, despite its appellation, and despite the fact that education has long ceased to be considered as charity.

Unfortunately, however, the word charity has come to have a popular understanding which is a less favorable and a less desirable one. In this understanding, charity is something doled out and granted by the giver as a matter of grace on his part, there being conveyed to the recipient associations which are felt to be more or less degrading, and which do not comport with full independence of character. Truly as education may be charity, it is no longer thought of in connection with schools in general, they being now entirely without such connotation. Only those schools which are for the education of certain classes, as the blind and the deaf, and which are established no less for educational ends, are left with the invidious signification of the term. To render the situation more unhappy still, it happens that the state maintains institutions for certain other classes, as the insane, the feeble-minded, and the infirm, which are largely custodial in character,

¹ 43 Neb., 184, 61 N. W., 568. See also Message of Governor, 1897, p. 39; 1899, p. 42; Report of Attorney-General, 1896, p. 79.

² 50 Fla., 293, 39 So., 929.

³ In the majority of opinions rendered by Attorney-Generals of the several States, so far as they have concerned the institutions, these have been held to be educational. See Opinions of Attorney-General of United States, 1897, p. 1; 1900, p. 287.

together with institutions of a reformatory, corrective, or punitive nature. With them, under the present conceptions, have to be classed the schools for the blind, all being known as the state's "charitable institutions" or "State institutions." Blind children thus, instead of being pupils in a school as are other children with no defect of sense, are "inmates" of a public institution or asylum, and are the wards of the state.

The chief trouble, then, in classifying the schools for the blind as charitable is this connection with the word charity, and the grouping of the blind with certain other parts of the state's population, which other children do not have to share. The latter receive an education merely as an education: the blind receive it as charity. Their schools are misrepresented in being aligned on the one hand with institutions for persons with defective or diseased minds, and on the other with institutions for the State's delinquent and criminal classes. The fact that blind children are put in the way of gaining an education is in great measure lost sight of: the public rarely discriminates or makes note of the distinctions involved.

Education is now such a fixed principle in American institutions that it should, it seems, be bestowed upon all qualified for it in its true implications. Even in designation the blind should receive their education as a right and as nothing else. They should not be denied in name any more than in deed that which is the paramount privilege of all American children.

Not only on principle, but in actual practice the schools for the blind are conducted as educational establishments. Admission into them has become in nearly all respects like that into schools for children who see. They describe themselves now almost altogether as "schools," all of them having at present abandoned the term "asylum," which was applied to some at the beginning,¹ and many having even discarded the title "institution." The schools are open as a usual thing only to children capable, mentally and physically, of being instructed. Pupils who have finished the prescribed number of years of attendance cannot be provided for longer; in vacation time they cannot (except in certain special cases) be in residence. The schools have become free to all, as we have seen, while compulsory laws are having an increasing application to the blind. In short, if schools for the blind are in fact educational, they can be regarded as charitable only to the extent that all schools are so considered: they should not be looked upon in a different light, and should not be denominated otherwise.²

¹ The term "asylum" was bestowed upon some of the schools at their founding after the manner of the English schools, which were largely created and maintained by charity.

² In a legal sense, nearly all educational institutions can be called charitable, especially if they are privately endowed and supported; and gifts for them are held in the law as

ARGUMENTS FOR CONNECTION WITH PUBLIC CHARITABLE AGENCIES

If such is the theory as to the status of schools for the blind, what are the actual grounds upon which their connection with the State's charitable agencies may be justified? The answer is found largely in the practical workings of the arrangement. Under this, we are told, the schools may be afforded the substance at least in the way of beneficial treatment, no matter by what name it may be called. With capable and sympathetic boards, all the needs of the schools may be attended to with generally satisfactory results. The experience of such boards with similar institutions, especially as regards the housing of a large number of persons, may be utilized to no small advantage. By this plan supplies for all the State's institutions may be procured on the most favorable terms, the appropriations to be asked for from the legislature may be properly apportioned, and there may otherwise be due correlation of all the means of the State for the maintenance of those classes of its population which have to be congregated in special establishments. Such boards may also have peculiar opportunities for coming across poor and neglected children and of getting them into the schools.

An argument often heard in favor of the connection with the boards of charities is that, though the institutions may in the main be educational, there is much else in their work to be considered. During the school year a home and board are provided for the pupils, entirely without cost to their parents, and usually clothing and transportation as well for those in need of them. The schools are looked upon as containing a number of dependent children gathered in one of the State's public institutions, and hence properly subject to approaches of the appropriate agencies of the State. Rarely is there any unwillingness to give full recognition to the educational claims of the blind, much less to injure or to stigmatize them. The whole question is held to be one largely of administrative efficiency.¹

OBJECTIONS TO CONNECTION

Of the force of the arguments for the connection with charitable agencies, educators of the blind are fully cognizant. Yet they do not hesitate to affirm the positive benefit, as well as the general desirability for charitable purposes. This doctrine has been affirmed in American courts from the earliest times to the present.

¹ It is also believed that use of the expression "educational institution" without some qualification in referring to the schools would be misleading. On the claims of the State agencies with respect to the schools, see South Carolina Bulletin of State Charities and Corrections, iii., 1917, 4, Dec., p. 65. See also Report of Michigan Board of Charitable, Penal, and Reform Institutions, 1878, p. 41. See also *Charities Review*, vi., 1897, p. 529.

ity, of an arrangement whereby schools for the blind may be completely dissociated with whatever savors of charity. As long as the connection continues, it is averred, the schools and their pupils will have to suffer. The pupils both while in school and in after life are entitled to a recognition of the true character of their education. The public cannot too soon be brought to understand the correct status of the schools.¹

In so far as the practical aspects of the matter are concerned, it is declared that the possible advantages from the connection with the State's charitable agencies may be more than offset by connection with its educational agencies, where the school for the blind has its due place in the public educational system. Educational recognition in particular may serve to promote educational standards in the schools.² As for the maintenance afforded the pupils during their school period, this is to be regarded as but an incidence when any other plan would be impracticable, and as quite analogous to the providing of text-books or medical attendance or transportation in other schools. The dominating purpose in the work of the institutions for the blind is education; what is supplied beyond only renders this the more effective.³

Under charitable agencies the schools do not receive from the public the regard which should be theirs, and their pupils are subjected to a discrimination which children who possess sight do not have to bear. Whether wittingly or not, blind children in their efforts for an education have an injury done to them from which they should be spared.⁴

¹ The theory has been stated by a committee on charitable institutions of the Massachusetts legislature in 1869: "We believe that blind children have the same claim upon the state for education as seeing children, and that their needs are greater." Report of Perkins Institution, 1881, p. 98; M. Anagnos, "Education of Blind," 1882, p. 51.

² Under such standards increased appropriations from the State are the more likely.

³ Many of the schools take pains to disclaim any but an educational character. In their reports they have often been declared not to be "asylums," "homes," "retreats," "almshouses," "infirmaries," "houses of refuge," or "hospitals for the treatment of diseases of the eye." On efforts to deny inspection by boards of charities, see Report of Board of Charities and Correction of South Carolina, 1918, p. 50.

⁴ On views of educators of the blind, see Proceedings of American Association of Instructors of Blind, 1888, p. 53; 1896, pp. 6, 50; 1898, p. 49; 1902, p. 20; Proceedings of National Conference of Charities and Correction, 1882, p. 212; 1890, p. 442; Proceedings of National Education Association, 1903, p. 1007; Report of United States Commissioner of Education, 1899, i., p. 453; Report of New York State Department of Education, 1913, p. 81; Indiana Bulletin of Charities and Correction, June, 1897, p. 31; Ohio Bulletin of Charities and Correction, xv., 1, Feb., 1909, p. 88; Proceedings of Wisconsin Conference of Charities and Correction, 1893, p. 100; Bulletin of Iowa Institutions, vii., 1905, p. 137; xi., 1909, p. 132; Message of Governor of Kansas, 1877, p. 17; *Ohio Harp* (Ohio School), i., 1904, p. 155; ii., 1905, p. 10; W. B. Wait, "Reasons for Passage of Senate Bill no. 861" (New York), 1899; "Business Administration," 1909, xii., p. 93; "The Making of America," 1909, x., p. 93; Report of Indiana School, 1892, p. 28; Kentucky School, 1881, p. 8; 1891, p. 17; Georgia School, 1873, p. 7; 1877, p. 9; 1882, p. 12; Texas School, 1875, p. 14; 1877, p. 4; 1880, p. 5; 1895, p. 9; 1900, p. 14; New York State School, 1896, p. 22; 1899, p. 24; 1901, p. 17; 1917, p. 18; Maryland School, 1883, p. 9; California School, 1896, p. 10; Perkins Institution, 1854, p. 27; Ohio School, 1889, p. 9; Iowa School, 1881, p. 20; 1899, p. 26; Montana School, 1905, p. 9; Kansas School, 1896, p. 7; Louisiana School, 1916, p. 29; North Carolina School, 1900, p. 7; Arkansas School, 1918, p. 12; Pennsylvania Institution, 1923, p. 21; 1924, p. 12; 1926, p. 11.

CHAPTER XXX

PROVISIONS REGARDING ADMISSION OF PUPILS INTO SCHOOLS

RULES AS TO PAYMENT OF FEES

Concern in the education of blind children may now be directed to the provisions relating to the admission of pupils into the schools, and initially to their rules with respect to the payment of fees. The schools for the blind are for all practical purposes free to every applicant qualified to enter. At their beginning they were without cost to the indigent only, though some, especially in the West, were made so to all blind children from the very first. But even in those schools where a charge might be imposed, there was little attempt at its collection; and all such limitations of a formal character were in time, as we have seen, for the most part given up. At present restrictions of any kind are found in the smaller number of States, and exist in these in form rather than in practice, so that today laws or regulations of a restrictive nature with respect to payments for attendance at schools for the blind may be regarded as but nominal.¹

In virtually every State at present tuition is offered free to all, while board is provided without cost to the indigent at least. In hardly more than a dozen is there any regulation short of universal admittance prescribed. In the following States, according to the wording of the statute, either directly or by implication, it would seem to be indicated that the schools, or, in their absence, the proper public authorities, were still empowered to demand a charge in whole or in part from those able to pay: Arizona, Delaware, Florida, Georgia, Kansas, Louisiana, Maryland, Massachusetts, Mississippi, Nevada, New Jersey, New Mexico, Pennsylvania, South Carolina, and Tennessee—the laws of these States at least making reference in some place to the indigent.² But with or without such references there is very rarely an actual charge to any pupils, indigent or not. In some States proof of indigence is still formally necessary before pupils are given the benefit of the schools;³ and in a few payment may be made if desired.⁴

¹ The statutes of certain States, as of Maine and Massachusetts, expressly declare that no discrimination may be made on account of wealth.

² On the subject of legal charges, see *American Journal of Sociology*, iv., 1898, p. 51.

³ In a few States "certificates of inability" have been demanded.

⁴ Now and then a suggestion is made that charges be exacted of those whose parents are able to pay. See Message of Governor of California, 1897, p. 3; 1899, p. 18.

PROVISION FOR COLLATERAL SUPPORT OF PUPILS

The state thus supplies the means for education, and for maintenance during the period of education, to blind children without charge on their part. But to insure the attendance of those who by reason of poverty might be prevented from availing themselves of its bounty, it assists even further. In cases where no other resources are available, it furnishes free of expense to the pupils who come clothing and transportation to and from the schools.¹

AGE LIMITS OF ATTENDANCE

With most of the schools for the blind, the age limits of attendance are fixed, and pupils may be admitted only within the time prescribed. The limits may be established by the law, may be determined by the trustees or other managing body of the school in the form of regulations, or may be laid down by the responsible head of the school. The first is the most usual procedure, and the last the least frequent. Where no limits are fixed by the statute, the matter is left to the discretion of the authorities. In some schools the age permitted is the common school age, and in others pupils are admitted who are of "suitable age and qualifications" or of "suitable age and capacity."² Even where fixed limits are the case, they are not rigidly adhered to or closely observed, and considerable elasticity may be allowed in their application.³ There is a very general tendency to permit pupils to enter at whatever age and to remain for whatever number of years will be of benefit to them, and not to the detriment of the school.⁴

In schools where the limits of attendance are specified, the minimum age is usually six, seven, or eight, while in a small number it is five or even less, and in a few nine. The age limit for the completion of the

¹ In certain cases pupils, especially if without a home, may be allowed to remain at the schools during vacation time. In all the institutions medical attention is provided for, and in many, ocular examination also. In Iowa, Louisiana, and Michigan is authorized treatment at the hospital of the State university. In North Carolina special accommodations are directed for the curable. In Georgia free transportation on a State-owned railroad has been allowed.

² In certain instances persons past school age are allowed to attend for the purpose of learning a trade.

³ In the case of the Michigan School it is said that there is "a little leeway either way." Proceedings of Michigan Conference of Charities and Correction, 1906, p. 19. In West Virginia pupils may be received "as much longer as in the discretion of the board and principal their condition and progress would seem to justify." In Oklahoma the pupils may enter below or above the age limits at discretion. In South Dakota there may be an attendance above or below the limits "where circumstances permit." On the subject of age periods for the blind, see Report of Michigan School, 1896, p. 15; Utah School, 1916, p. 14; New York State School, 1896, p. 28; 1903, p. 24; Pennsylvania Institution, 1907, p. 79; Proceedings of 1st International Congress in America on Welfare of Child, 1908, p. 324.

⁴ The age for receiving very young children often depends on the special care required by them and on their capacity for education, and on the treatment extended them at their homes.

school period is generally nineteen, twenty, or twenty-one, though in a few it may be as high as twenty-five. In day schools the limits are sometimes different, there occasionally being a lower limit of three. The most frequent age period at present, where such is definitely stated, is from six to twenty-one, though several other periods are almost as common. In some cases pupils are allowed to remain in school a certain number of years, with sometimes an upper limit as to age. In a number the period may be extended several years when the progress of the pupil seems to justify a more protracted residence.¹ Finally, it is to be noted that the limits of attendance have in general been lowered, and have been in some degree made to conform with those in the regular schools.²

¹ The formal age period is from 6 to 21 in Arizona, Idaho, Kansas, Minnesota, North Carolina, Oklahoma, Oregon, Tennessee, Texas, and Washington; from 7 to 21 in North Dakota; from 5 to 21 in California, Illinois, Iowa, New Mexico, and New York; from 6 to 18 in Mississippi; from 8 to 25 in Wisconsin; and from 9 to 25 in Maryland. In Arkansas, Colorado, and Florida the period of attendance is from 6 to 21, with an extension of the upper limit if advisable (in Arkansas for 13 years). In Alabama pupils between the ages of 7 and 21 may remain 10 years, with an extension to the age of 25. In Maine, Oregon, and Rhode Island the period is 10 years, an extension being allowed in all three. In New Jersey the period is 3 years, with an extension of 8, and a still further one. In Delaware the period is 5 years, which may be extended 7 more. In New York an attendance of 8 years is allowed, which may be increased by 3 years, and again by 3. In Kentucky the limits are 6 and 18, which may be extended. In Michigan the limits are 7 and 19, with attendance above or below these limits, and the period of attendance 12 years, which may be extended to 14. In West Virginia the limits are 8 and 25, with an attendance of 5 years, which may be extended. In Montana the limits are 6 and 21, with a residence of 10 years, which may be extended by 2. In New Mexico the limits are 5 and 21, though pupils below the lower age may be admitted. In Virginia the limits are 8 and 21, with a residence of 10 years, which may be extended. In South Dakota the limits are 6 and 21, with a period of attendance of 12 years (in certain instances beyond 24). In Georgia the limits are 8 and 25, with a residence of 12 years. In Missouri the limits are 6 and 20, with a residence of 12 years allowed, which may be extended. In Louisiana the limits are 7 and 22, pupils entering under 14 being allowed to remain 10 years, entering between 14 and 17 to remain 8, and entering over 17 to remain 5—with an extension of 2 years in each case. In Wyoming there is only a lower limit of 6 years; in Indiana only an upper limit of 21; and in Utah only an upper limit of 30. In Vermont the period is from 5 to 18, after which further provision may be made, this being especially of an industrial nature after 14. In some cases the extra time allowed is primarily for the purpose of instruction in a trade, as in Arkansas, Iowa, New York, and Ohio. This may be 1 or more years. In some States having day schools the age limits are the same as for institutions; in other States they are the regular school age. In the day schools in Ohio the lower limit is 3; in those in Iowa the upper limit is 16. In those of Michigan the limits are 3 and 20, in those of Illinois 3 and 21, and in those of Wisconsin 5 and 18. In certain States, as Massachusetts, Ohio, and Pennsylvania, it is expressly provided that children may enter at whatever age and may remain for whatever period of time seems best for them.

² A not infrequent formal requirement is that the applicant be so defective in eyesight as to be unable to receive an education in the regular schools. Other restrictions upon attendance, adopted in a greater or less number of States, refer chiefly to the possession by the applicant of a sound mind; freedom from disease, especially an infectious one; and good moral character. Occasionally a statement with respect to citizenship or legal residence is necessary. In several States it is provided that in case there should be a larger enrollment than there are accommodations for, pupils are to be apportioned among the several counties. (In Kansas commitments to schools for the blind are not authorized by juvenile court laws. Report of Kansas Board of Control, 1906, p. 326.) Schools are often given power to dismiss undesirable or unsuitable pupils. (In North Carolina incorrigible children may not be received.)

CHAPTER XXXI

ATTENDANCE OF BLIND AT SCHOOLS

PROPORTION OF BLIND CHILDREN IN SCHOOLS

With provision for the instruction of the blind made in all the States, the question presents itself as to the extent to which they avail themselves of their privileges. According to the returns of the Federal census, of the blind from five to twenty-four years of age, or of a fairly broad school age, over three-fourths have attended the special schools.¹ Of the blind losing sight under the fifteenth year, or at a time when admission into such schools was possible, not far from three-fourths likewise have so attended. If, furthermore, we compare the total number of blind persons reported to be between the ages of five and nineteen, which may be regarded as a more or less representative school age, with the actual number in attendance, we may perhaps find the nearest approach to the true situation. The number enumerated as of such age is (on the basis of a total blind population of 100,000) about 7900 (1930), and the number reported as in attendance at school 6084 (1926-1927); hence it would appear that some three-fourths (77.0 per cent) of the blind children in the country are in the special schools.²

For more particular presentations of the matter, we may turn to estimates made in certain individual States with regard to the number of blind children not in school who should be in. This proportion varies considerably between different States, ranging in general in the past from one-third to one-half, or even more. Of later years a somewhat more favorable showing is for the most part reported—though in some areas conditions appear to be but little improved. In certain States nearly all blind children are said to be in school.³

¹ See *ante*, p. 212.

² There can be little question that the proportion of the blind in the schools has increased in the course of the years. The number between the ages of five and nineteen in 1930 represents 7.9 per cent of the total number of the blind. If this be taken as the normal proportion for this age, the number of such age in 1880 should be 4929, whereas the total number of pupils in school was 2032, or 42.1 per cent; the number of such age in 1890 should be 4898, whereas the number in school was 3215, or 65.6 per cent; the number of such age in 1900 should be 6241, whereas the number in school was 4021, or 64.4 per cent; the number of such age in 1910 should be 6873, whereas the number in school was 4323, or 63.0 per cent; and the number of such age in 1920 should be 7268, whereas the number in school was 4947 (1922), or 68.1 per cent. (These figures are in part estimates.)

³ See Message of Governor of Kentucky, 1914, p. 50; Institution Quarterly (Illinois),

If these estimates may be taken as representative of general conditions in the country, there is found to exist a most deplorable state of affairs. It means that, with full allowance made for the small proportion mentally or physically unfit for schooling, only a part of the blind children of the United States are taking advantage of the educational opportunities put before them. The situation is better in some States than in others, but in very few can it be called fully satisfactory.

LENGTH OF STAY IN SCHOOLS

For most blind children it is probable that resort is had to the schools for a longer or shorter time, though what proportion this constitutes of the total we do not know. A portion remain only a year or two, some only a few years, some a longer period, and some throughout the entire school course. In certain schools the average period of attendance of pupils is about six or seven years. For those who graduate the period is considerably longer, perhaps twice as long.¹

Reasons for abbreviated stay in schools, whether ascribable to late entrance or to early departure, are various: tardy admission (because of more recent loss of sight, lack of desire for education, unwillingness of parent to part with child, etc.); possession of sufficient sight to be transferred to a regular school; poor health or physical condition; low mentality; completion of school course; dissatisfaction with school life; home influences; etc. A prolonged stay at the same time may be due to a desire for a continuation of studies or to do special work. It is to be remembered that there is not the same incentive with blind children to leave school and to take up remunerative employment as there is with children who have sight.²

iii., 1912, 2, June, p. 40; Report of Illinois Board of Charities, 1908, p. 222; Report of Illinois Board of Administration, 1910, p. 564; Report of New York Board of Charities, 1915, i., p. 389; Report of Missouri Board of Charities and Corrections, 1910, p. 70; Proceedings of Michigan Conference of Charities and Correction, 1906, p. 22; 1908, p. 34; *New Jersey Review of Charities and Corrections*, vii., 1908, p. 151; Report of New York Commission for Blind, 1906, p. 18; Report of Pennsylvania Commission for Blind, 1925, p. 20; Report of New York State School, 1896, p. 21; 1901, p. 12; Kentucky School, 1906, p. 23; 1909, p. 23; 1914, p. 27; 1916, p. 27; 1927, p. 40; Illinois School, 1910, p. 10; South Dakota School, 1912, p. 114; North Carolina School, 1873, p. 8; 1900, p. 19; 1902, p. 11; Texas School, 1911, p. 5; Tennessee School, 1901, p. 15; Ohio School, 1906, p. 7; Indiana School, 1900, p. 32; Wisconsin School, 1908, p. 254; Pennsylvania Institution, 1921, p. 11.

¹ Of former pupils of the Pennsylvania Institution, 3.6 per cent had remained at school less than one year; 0.0 per cent, one year; 7.4 per cent, two years; 5.3 per cent, three years; 4.4 per cent, four years; 8.7 per cent, five years; 8.4 per cent, six years; 5.9 per cent, seven years; 7.4 per cent, eight years; 7.7 per cent, nine years; 6.8 per cent, ten years; 7.1 per cent, eleven years; 7.4 per cent, twelve years; 6.2 per cent, thirteen years; 3.2 per cent, fourteen years; 1.2 per cent, fifteen years; and 9.3 per cent, twenty years. The median number of years of residence is a little over seven years. Publications of Pennsylvania Institution, no. 3, 1924, p. 15 ("What Can the Blind Do?"). In this school two-thirds of pupils remain more than five years, and one-third more than ten. W. C. Posey, "Hygiene of Eye," 1918, p. 288.

² For pupils leaving the Maryland School from 1924 to 1926 the reasons assigned, with

Blind children as a general thing may be said to enter school at a little later age than do children with sight, and to remain to a little later age.¹ In a given grade children who are blind are found to be on the average about three years older than children who can see.²

It thus seems to be established that only a part of blind children are in the schools the full time allotted them, these neglecting to utilize their educational facilities as they should. For a large number, moreover, it is found that such facilities fail altogether to be availed of, these passing by as though their schools had no existence. But whatever the respective proportions of those who enjoy to some extent, and of those who do not enjoy at all, their opportunities for instruction, it is quite certain that with a very great number of the blind children of the country the work of the schools is not permitted to have full effect.

NEED OF COMPULSORY EDUCATION LAWS FOR BLIND

The situation, then, with respect to the effective attendance of the blind at the schools created for them is a very unsatisfactory one. We are confronted with the discovery that no small number of blind children are receiving at the most but a part of the schooling they should. Conditions are not the same in all the States, being better in some than in others, but in practically all they are such that earnest attention is demanded.

For this state of affairs the schools for the blind are not to be held accountable. The fault does not lie with them. The school authorities are in general more than zealous in their efforts to reach all the blind children and to bring them in, and usually leave no stone unturned to accomplish this result.³ The doors of the schools are open wide, and all the blind who will may receive an education.⁴

The seat of the trouble must be looked for elsewhere. Responsibility the percentage for each, are as follows: graduation, 36.8; voluntary withdrawal, 7.9; ill health, 7.9; acceptance of employment, 15.8; low mentality, 10.5; removal of home to new locality, 7.9; miscellaneous, 13.2. Report of Maryland School, 1926, p. 19.

¹ See *ante*, p. 213. Of children entering the Pennsylvania Institution (1930) 31.9 per cent are under seven; 8.5 per cent from seven to nine; 30.0 per cent, from ten to fifteen; 25.5 per cent, from sixteen to twenty-two; and 4.1 per cent, over twenty-two.

² White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 64. See also F. F. Caldwell, "Comparison of Blind and Seeing Children in Certain Educational Activities," 1932, p. 27.

³ In several States "field officers" are of great help in finding children and prevailing upon them to come to school. In other States a similar work is done by special agents. By some schools the names of blind children not in school are published in their reports. On efforts to reach blind children, see Report of Missouri School, 1897, p. 3; Nebraska School, 1892, p. 30; North Carolina School, 1894, p. 5; Tennessee School, 1899, p. 43; Colorado School, 1900, p. 8; New Mexico School, 1907, p. 6; Wisconsin School, 1914, p. 3.

⁴ It has sometimes happened that the facilities of a school are already overcrowded, with perhaps a waiting list of prospective pupils. This, however, does not render the need any the less. It should be the duty of the state to provide sufficient accommodations for all of the blind who are entitled to an education.

belongs probably in the largest degree with the blind themselves, or rather with their parents. It happens very often that blind children are the objects of special regard, or even of favoritism, in their homes, and are granted indulgences not accorded to their seeing brothers and sisters. The prospect of the separation of the blind child from its family, even for the purpose of education, seems peculiarly painful; and if to this is added, as is often the case, the equal unwillingness of the child to part from the home, the situation becomes one far from easy to deal with. A still remaining factor in the situation in not a few instances is the ignorance which parents actually have with regard to the existence of the school—though this is proving of lessening extent through the efforts of the schools and other agencies to carry this knowledge to the farthest corners.

But whatever the causes of the failure of blind children to attend their schools, and to avail themselves fully of the educational opportunities of the state, the interests of these very children enjoin a change. The only completely effective remedy is the enactment in all the States of strict compulsory education laws for the blind, to include not merely attendance at the schools, but an attendance for a sufficient number of years and for a sufficient length of time each year—and the uncompromising enforcement of such laws.

Without the strength and backing of the statute, all efforts, however creditable and persevering they may be, are not likely to be of full avail. Only through the law can the necessary results be secured. Hard as it may seem, in the enforcement, to take a blind child from its home, especially if in its tender years, and to separate it from its family for a number of months at a time, the compensating benefits, direct and indirect, are so great as to overcome all other considerations. Nothing at all, in fact, should be allowed to interfere with the operation of the law. It is the only course if blind children are not to grow up in ignorance and without schooling, and if their real interests are to prevail.¹

¹ On the need of compulsory education laws for the blind, see Proceedings of American Association of Workers for Blind, 1911, p. 102; Report of Minnesota Commission for Blind, 1923, p. 72; Proceedings of Pennsylvania Association of Directors of Poor and of Charities, 1901, p. 77; Report of New York State Board of Charities, 1903, p. 495; 1911, p. 245; Report of Iowa Board of Control, 1903, p. 43; Report of Oklahoma Commissioner of Charities and Corrections, 1912, p. 420; Report of Tennessee Board of State Charities, 1917, p. 23; Report of Arkansas Board of Control, 1922, p. 153; Bulletin of Iowa Institutions, v., 1903, p. 1; Report of Board of Control of West Virginia, 1922, p. 647; Report of Maryland Board of Charities and State Aid, 1913, p. 143; Quarterly Representing Minnesota Educational, Philanthropic, Penal, and Correctional Institutions, xvii., 1917, 1, Aug., pp. 16, 30; Message of Governor of West Virginia, 1917, p. 88; Illinois Institution Quarterly, ix., 1918, 1, March, p. 45; Report of North Carolina School, 1876, p. 18; 1896, p. 6; 1898, p. 6; 1901, p. 11; 1906, p. 11; 1908, p. 9; 1910, p. 9; Iowa School, 1882, p. 16; Pennsylvania Institution, 1888, p. 20; New York Institute, 1887, p. 15;

PRESENT EXTENT OF COMPULSORY EDUCATION LAWS

Compulsory education laws have been made increasingly to apply to the blind within recent years. In 1900 there were only one or two States with them; in 1920 they were on the statute books of about two-thirds of the States; at present all but ten States have them.¹ In some States the blind are included in the general enactments upon the subject;² in other States there are special provisions relating to the blind. In some cases the laws are somewhat impaired by the exceptions permitted in them.³ The period of attendance specified may be the whole school year, but more often a part, as from five to eight or nine months. The term for which attendance is required is either a designated number of years, as five or eight, or a period between certain limits, as from eight to sixteen, from seven to eighteen, and the like.⁴ In an increasing number of States there is simply an upper or a lower age limit.⁵

It would be highly desirable if we knew with some definiteness what have been the results of the present laws. In some States the situation is said to be but little improved, chiefly because of the slight effort put forth for the enforcement of the statutes. So far as this is the case, further measures, with more determined and insistent carrying out of the provisions, are required. There is no question, however, that on the whole there has been gain through the laws.⁶ This may perhaps be evidenced in the better attendance at some of the schools of recent years, to which reference has been made.⁷

Michigan School, 1898, p. 17; New York State School, 1897, p. 14; 1902, p. 29; 1903, p. 25; Tennessee School, 1901, p. 11; 1903, p. 18; 1913, p. 18; Illinois School, 1906, p. 17; Maryland School, 1913, p. 9; Oklahoma School, 1912, p. 15; 1914, p. 13; *Voices from Darkland*, June, 1916; *Justice of Peace*, lviii., 1894, p. 539; White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 252.

¹ States not having the laws are Alabama, Florida, Kentucky, Louisiana, Maine, Missouri, Nevada, New Hampshire, South Carolina, and Wyoming.

² Now and then it is provided that no child may be excused from school by "no physical or mental condition." In most cases the deaf are embraced as well.

³ An exception is sometimes made for children whose instruction is provided for at home.

⁴ The age limits are 5 and 18 in Vermont; 6 and 16 in Pennsylvania; 6 and 16 in Arizona, Colorado, Maryland, and Wisconsin; 6 and 21 in Indiana, Oklahoma, and Washington; 7 and 18 in Delaware, Kansas, Nebraska, North Carolina, and Rhode Island; 7 and 19 in Iowa and Michigan; 7 and 20 in New Mexico; 7 and 21 in North Dakota; 8 and 18 in Illinois, Montana, Ohio, Oregon, and Utah; 8 and 20 in West Virginia. In Arkansas there is a lower limit of 8; in Minnesota, an upper limit of 16; and in Connecticut, an upper limit of 18. Sometimes age limits may be lower in case of an already secured education, or higher in case of inability to secure employment.

⁵ The penalty for violation of the law is usually a fine of varying amounts, as from \$5 to \$200, with now and then imprisonment as an alternative or added punishment, the offense sometimes being characterized as a misdemeanor. In certain States truancy officers are expressly designated to enforce the provisions of the statute.

⁶ See *Outlook for Blind*, xi., 1918, p. 120; Report of Massachusetts Commission for Blind, 1914, p. 14.

⁷ Some effect is without doubt had upon the situation by the increasing introduction of day schools in later years.

In addition to the compulsory education laws for blind children, there are in a number of States statutory provisions which may be of greater or less avail in bringing children into the schools, or at least of acquainting the schools with the existence of such children. These requirements are of two kinds. The first is the enumeration of blind children by some local civil officer, usually a county assessor, and less often a county clerk, county recorder, census marshal, or other official, or, especially in New England, town selectmen—occasionally by more than one such official—with report thereof in some cases directly to the school authorities.¹ The second is the notification of the school authorities of the blind children discovered, by local educational authorities, usually the county superintendent of schools, and occasionally by the school clerk of an education district—sometimes through the State department of education.² In some States both of these regulations exist, and the schools in them have thus dual means of finding blind children.³ In certain instances assistance also comes from the activities of health officers, children's bureaus, and other public agencies.⁴ Finally, it may be stated that the increasing operations of State commissions, home teaching, and other agencies for the blind are having a not unimportant effect in getting children into the schools.

¹ Such is the case in Arizona, Arkansas, Connecticut, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

² Such is the case in Arizona, Arkansas, Colorado, Connecticut, District of Columbia, Idaho, Indiana, Iowa, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Virginia, Washington, West Virginia, and Wisconsin. See *American Year Book*, 1917, p. 379.

³ The work required of some of these local officers does not often seem to be effectively done. See *Report of North Carolina School*, 1908, p. 9; 1910, p. 9.

⁴ In many States also assistance in spreading information is rendered by various agencies, especially newspapers.

CHAPTER XXXII

FORMS OF INSTRUCTION GIVEN IN SCHOOLS

INTELLECTUAL INSTRUCTION

The instruction or training afforded in the schools for the blind may be said to be of four main forms: intellectual, physical, musical, and manual. The first of these naturally constitutes the core of their work, and represents their primary function, though the others receive, relatively, more attention than is the case in schools for the seeing. In the literary education offered the general lines of procedure follow closely those of the regular schools, the courses of study provided in the one corresponding with those provided in the other.¹ The work for the blind of a pedagogical character in fact keeps pace in practically all particulars with that for the sighted.² The chief distinction involved in the instruction of the two consists in the apparatus employed, the blind requiring a specially devised system of raised print for their text-books and for their writing and other notation.³ (Oral instruction is also availed of to a greater extent with the blind.) The standards of education maintained in the schools for the blind have constantly advanced; and many of them in their academic achievements have reached a high plane.⁴

Pupils in the schools are taken through the primary, intermediate, grammar, and high school grades.⁵ In most of them there is also a preliminary period of kindergarten instruction.⁶ Pupils

¹ On differences in age between blind and seeing pupils, see *ante*, pp. 214, 379.

² On comparison of the education of the blind with that of persons with sight, see Report of United States Commissioner of Education, 1883, p. clxvi.; Report of New York Institute, 1899, p. 19; 1903, p. 19; W. B. Wait, "Short Study in Comparative Education," 1900; W. B. Wait, "Short Study in Comparative Education, no. 2," 1903; F. F. Caldwell, *op. cit.*; *Outlook for Blind*, ix., 1910, p. 48; *Pedagogical Seminary*, xxxvi., 1929, p. 21.

³ The forms of raised print used by the blind are considered in Chapter XXXVI. In certain institutions there are special sight-saving classes.

⁴ Indeed, it may be said that the regular schools owe something to the methods that have been worked out, and to the results attained, in schools for the blind.

⁵ Of more recent years special consideration, particularly in certain schools, has been given to mental tests or psychiatric examination of pupils, in a few cases there being organized clinical facilities for the purpose. (More or less special attention is also given to speech defects.) Chief work has been at the Pennsylvania and Perkins (Massachusetts) institutions and at the California School. In the work the American Foundation for the Blind has had some part.

⁶ Organized kindergarten work began at the Pennsylvania Institution in 1882. It was started at the Perkins Institution in 1887, as the result of a campaign to provide for children too young to enter it.

who have completed the prescribed course of study are formally graduated.¹

In the year 1926-1927 there were reported in the schools for the blind in the United States 6084 pupils—85.2 per cent in the institutions, 12.8 per cent in the day schools, and 2.0 per cent in the private institutions.² Of the total number 5.5 per cent are in kindergarten departments, 35.7 per cent in classes corresponding to grades one to four, 32.5 per cent in classes corresponding to grades five to eight, and 20.3 per cent in high school classes (there being 6.0 per cent unknown).³

Compared with normal children, or with the children in the regular schools, there are smaller proportions of the blind in the lower grades, and larger proportions in the higher.⁴ The proportions of the blind and of seeing children (as found in special computations) in grades one to four are, respectively, 40.5 per cent and 50.2 per cent; in grades five to eight, 35.4 per cent and 33.8 per cent; and in grades nine to twelve, 24.1 per cent and 16.0 per cent.⁵

From 150 to 200 pupils formally graduate each year, or 2 or 3 per cent of the total number enrolled. Of these (from 1925 to 1929) two-fifths (40.5 per cent) continue their studies at the schools; one-fourth (25.2 per cent) enter college; one-tenth (9.5 per cent) enter a vocational or industrial school; one-twentieth (5.5 per cent) enter other special schools or courses; and one-fifth (19.3 per cent) return to their homes or are otherwise provided for.⁶

PHYSICAL TRAINING

For the physical development of blind children much more attention is demanded than for children having sight, and perhaps of an extent but little realized by the general public.⁷ In the schools the consideration given to this is often, in some respects, second in importance to

¹ The number of volumes in the libraries of the schools is 46,324, and in raised print 157,478.

² Bulletin of United States Office of Education, no. 9, 1928. See also *ibid.*, no. 51, 1923; no. 78, 1919; and reports for previous years. In 1930 there were 5711 pupils. White House Conference on Child Health and Protection, "The Handicapped Child," 1933. For tables as to the number of pupils in the different schools, see Appendix B.

³ The total number of the blind who have received instruction in the schools from the beginning is probably somewhat over 50,000. This number is based upon the figures given in *Outlook for Blind*, Oct., 1908, with estimates for the schools not included therein, and with estimates for succeeding years.

⁴ For reasons for this situation, see *ante*, pp. 214, 379.

⁵ White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 63.

⁶ *Ibid.*, p. 66.

⁷ Of the boys at the Pennsylvania Institution, 36 per cent are said to give indications of curvature of the spine, and of the girls 45 per cent. H. R. Burch and S. H. Patterson, "American Social Problems," 1918, p. 274. See *Outlook for Blind*, Dec., 1918, p. 18; *ante*, p. 194; *post*, p. 466.

no other. Facilities for such training generally include physical culture and gymnasium work, together with recreation in outdoor play and sports.¹ Physical development may also be said to include to a certain degree the inculcation of habits of self-reliance in bodily movements, as in the going about alone, and in the performing of certain necessary acts without assistance.²

MUSICAL INSTRUCTION

Musical instruction has always occupied a prominent place in the work of schools for the blind.³ This is both vocal and instrumental. In the former is included considerable choral work. In the latter are embraced the piano and organ, and to a slight extent string and wind instruments. In some cases a place is made for harmony and composition. Musical training in the schools, in fact, "varies from instruction in the mere elements of music to very thoroughly organized courses of study and highly specialized instruction in the science and art of music."⁴ Pupils showing peculiar talent or skill are given full encouragement, special opportunities for development sometimes being provided.

The number of pupils to whom instruction in music is afforded ranges in the different schools from less than half to nearly all, the average being perhaps three-fourths. In the year 1926-1927 the proportion reported as given instruction in vocal music was 59.2 per cent, and in instrumental 44.2 per cent.

MANUAL OR VOCATIONAL TRAINING

Upon industrial training an emphasis has been put by the schools from the beginning. To it has been given very full attention, it often claiming the most concern of any form of their work.⁵ The purpose of the training is to provide if possible an industrial preparation which

¹ In some schools Boy Scout work and similar activities are engaged in.

² Particular attention may be directed to the correction of physical defects, the development of a proper carriage, and general self-helpfulness. This may extend to the teaching of correct habits and manners generally, including behavior in contact with the seeing, at entertainments, etc. See *Outlook for Blind*, xi., 1917, p. 22; Bulletin of National Catholic Educational Association, 1930, pp. 575, 584; Proceedings of American Association of Workers for Blind, 1927, pp. 13, 21, 24, 29; 1929, p. 129; Proceedings of American Association of Instructors of Blind, 1920, p. 69; 1924, p. 121; 1932, p. 737; White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 71; *Mentor*, *passim*.

³ A possibly exaggerated notion of the importance of musical education for the blind has been entertained on the part of the public. There has often been a tendency to believe that nearly all of the blind may become proficient in music, or have more or less musical talent which only needs to be developed. This has been a conception from the very first. "It is said that all of the force of the superintendents of the early schools was required to prevent the institutions from becoming mere conservatories of music." E. E. Allen, "Education of Defectives," 1900, p. 24.

⁴ Report of New York Commission for Blind, 1906, p. 29.

⁵ In some cases industrial training is expressly required by law. On the connection of this industrial training with the later welfare of pupils, see Chapters XVIII, LII.

will be of benefit in later life, besides affording the rudiments of industrial knowledge.¹ Industrial departments as such may not necessarily be maintained, but manual training of various kinds is extended, which may be useful afterwards, whether in the gaining of a livelihood, or in the discharge of household duties. In the latter province are embraced, especially for girls, domestic science and practical housework, of no small moment in the after lives of the pupils.²

Manual or industrial training most likely to be offered in schools, in varying order in different ones, includes the following:³ sewing, knitting, chair caning (cane, rush, pith), broom making, mattress making, brush making, mop making, rug making, basketry, weaving, carpentry, and cooking.⁴ In addition there is in general provided training in music (piano, organ, instrumental, and vocal), piano tuning, and typewriting. In a few schools there are also offered such subjects as braille shorthand, dictaphone operation, commercial arithmetic, business procedure, certain forms of salesmanship (including insurance), teaching of music, and poultry raising.⁵ In the year 1926-1927 the proportion of pupils reported in the industrial courses in the schools was 59.1 per cent.⁶

INSTRUCTORS IN SCHOOLS

In the schools for the blind there were in 1926-1927 employed 863 teachers, or one teacher for every 7 pupils.⁷ Of the teachers of the blind usually from one-sixth to one-third are themselves blind.⁸

Until comparatively recent years a limited training or preparation was afforded, or a sort of apprenticeship was served, in some of the

¹ It is sometimes thought desirable that schools should offer one or two years of vocational training, besides pre-vocational.

² There may be included light housework and work of "mother's helper." Work around the home may be known as "contributory effort." See Report of Perkins Institution, 1910, p. 21; Proceedings of American Instructors of Blind, 1910, p. 50.

³ See White House Conference on Child Health and Protection, "The Handicapped Child," 1933, pp. 71, 421.

⁴ Certain training has also been afforded at times in hammock making, shoemaking, woodworking, bookbinding, etc. Hand training of various kinds has been engaged in. Sometimes there have been included bead work, raffia work, etc., besides slöjd as a preliminary course.

⁵ Gardening, massage, etc., have occasionally been offered. In certain instances there have been experimental gardens and poultry farms. In a few there have been experimental shops or salesrooms, with exhibits, for the purpose of indicating business methods.

⁶ Hours for industrial training vary from 2 to 15 per week, with an average perhaps of from 5 to 10. On the amount of time to be devoted to manual training, see Report of Pennsylvania Institution, 1914, p. 28.

⁷ Laws providing pensions for teachers in general who have been in service a specified number of years apply for the most part to teachers of the blind as well. In a few States there is express mention of teachers of the blind. See Laws of Pennsylvania, 1923, ch. 366; Wisconsin Statutes, 1930, § 42.17. See also Report of Pennsylvania Institution, 1924, p. 16.

⁸ Of the instructors 25.5 per cent are male.

schools.¹ In a few cities a limited training was also possible in connection with the normal schools for teachers in day schools. Of later years there have been special training courses of more systematized order conducted, for a longer or shorter period of time, under the college or department of education in certain of the larger institutions of learning of the United States.² Sometimes there is coöperation or supervision by some school for the blind.³ Training may be afforded for teachers of both blind and semi-sighted children.⁴ In a few institutions summer sessions for the training of teachers have been provided.

WORK OF SCHOOLS IN OUTSIDE ACTIVITIES

With many of the schools a noteworthy development has been the undertaking of activities beyond their customary functions, some perhaps amounting to a kind of "extension teaching." These activities are of several kinds. To the adult blind, whether former pupils or other blind persons, the schools may minister in a number of ways. In some cases library facilities are extended, and in a few there is engaged in more or less home teaching in the homes of the blind. In a number of schools there are what are known as "field officers," whose duty it is to visit and assist blind persons in whatever way seems feasible—not the least part being to get into schools all blind children who are out—and to keep the schools informed regarding, and in touch with, the blind of the State.⁵ In the case of some schools not a little is done to secure employment for former pupils and other blind persons, either alone or in conjunction with other agencies, a few even conducting shops for the sale of goods made by the blind. In several

¹ In some States it is a legal requirement that heads of schools be trained teachers.

² The first efforts were at the University of California in 1918.

³ At the courses provided at Harvard University in conjunction with Perkins Institution there have been students from various countries. Much field work is done here. See *Bulletins of School of Education of Harvard University*; *Proceedings of American Association of Instructors of Blind*, 1930, pp. 518, 520; *Proceedings of World Conference on Work for Blind*, 1931, p. 93; *School and Society*, xii., 1920, p. 518.

⁴ Universities or colleges having had this work are University of California, University of Pennsylvania, Columbia University (Teachers College), Harvard University, University of Southern California, Western Reserve University, Catholic University, Fordham University, University of Cincinnati, George Peabody College for Teachers, New York University, and certain State normal colleges. See *ante*, p. 123. See also Report of Pennsylvania Institution, 1925, p. 29.

⁵ The work of field officers is in many respects similar to that of home teaching, which is later considered. It was commenced by the Pennsylvania Institution in 1903. Field officers are now found in a number of the schools. On this subject, see Report of Arkansas School, 1910, p. 12; Minnesota School, 1914, p. 18; New York State School, 1904, p. 53; Texas School, 1915, p. 27; Ohio School, 1909, p. 13; Pennsylvania Institution, 1903, p. 17; 1909, p. 17; 1914, p. 107; Utah School, 1926, p. 23; *Proceedings of American Association of Workers for Blind*, 1907, p. 63; 1911, p. 83; Report of United States Commissioner of Education, 1913, i., p. 472.

schools there are summer sessions, sometimes for the benefit of problem children or of children who have no homes. In certain instances the plants are used as summer schools for the training of adult blind persons in industrial pursuits.¹ Finally, there is being rendered by the schools more and more service in the way of advising parents with respect to the care of young blind children, and in efforts for the prevention of blindness, especially in spreading information on the subject.²

¹ See Proceedings of American Association of Instructors of the Blind, 1926, p. 247.

² In certain schools volunteer reading to pupils may be done by persons from outside.

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CHAPTER XXXIII

COST TO STATE FOR EDUCATION OF BLIND

FORMS OF PUBLIC APPROPRIATIONS

All the means for the support of the schools for the blind comes directly from the public treasury, except in the case of the smaller number which receive additional aid from endowment funds and occasional donations.¹ (In States having land grants additional sources of income are to be had.)² The maintenance of the institutions is undertaken by the legislatures of the different States, while that of day schools is provided for from local funds, in some cases with aid from State funds.³ Charges for clothing and transportation of indigent pupils are most often, as we have noted, paid by the county of their residence, though these are also assumed by some States.⁴ (Costs for transportation for day pupils may be paid by the local school authorities.) Costs for higher education are borne by the State treasury.

The legislatures make appropriations for the support of the schools for the most part in lump sums.⁵ In the case of the semi-public in-

¹ Figures in this chapter are, unless otherwise indicated, taken from Bulletin of United States Office of Education, no. 9, 1928, supplemented by figures from earlier reports. See also New International Year Book, 1928, p. 227.

² Endowment funds are mainly in certain of the semi-public schools and in a few of those which have received land from the Federal or State government. The amount of productive funds for the latest year reported is (in round numbers) as follows: California, \$28,000; Connecticut, \$25,000; Kentucky, \$70,000; Maine, \$12,000; Massachusetts, \$3,300,000; Minnesota, \$20,000; Mississippi, \$30,000; New York, \$2,250,000; North Dakota, \$200,000; Pennsylvania, \$1,000,000; and Washington, \$100,000. (Other States that have been reported include Colorado, Montana, South Dakota, Texas, and Utah.) See also Chapters XXXIV, XXXV.

³ In the District of Columbia one-half of costs is borne by Federal funds, and one-half by District funds. In Delaware the cost is distributed among the several counties. In Maryland aid may be received from the city of Baltimore.

⁴ Often a given sum, usually \$40, and now and then \$60, is allowed for clothing; or else the actual cost thereof is collected from the county, possibly some judicial procedure being necessary. In certain States the town or township plays a similar part. In a few States action may be taken by cities. On the extent of the liability of counties for payments, see *Auditor General v. Supervisors*, 54 Mich., 536, 42 N. W., 143 (1889); *Morris v. State*, 96 Ind., 597 (1884); *Matter of Lansing*, 153 N. Y. Supp., 639, 89 Misc., 312 (1915); *Western New York Institution for Deaf-Mutes v. County of Yates*, 94 App. D., 1, 87 N. Y. Supp., 534 (1904); *Western New York Institution for Deaf-Mutes v. Broome County*, 143 N. Y. Supp., 241, 82 Misc., 63 (1913).

⁵ It sometimes happens that legislatures are inclined to reduce the appropriations for the schools to the lowest possible sums. There is danger, however, that such a policy may be carried to an extent where efficiency is sacrificed to seeming economy. See Ohio Bulletin of Charities and Correction, xiii., 1907, 4, Nov., p. 17; Bulletin of Iowa Institutions, ix., 1907, p. 31; Report of Arkansas Board of Control, 1922, p. 146.

stitutions a *per capita* subsidy is generally allowed, this being from less than \$400 to possibly \$500 or \$600. For a few State institutions appropriations have been based upon the number of pupils in attendance, sometimes with additional subventions in lump form. In States where pupils are sent to a school in another State, they are usually contracted for at a sum from \$300 to \$500. In the States of Colorado and Idaho there is a special tax of one-fifth mill levied for the benefit of the school.¹ In certain States there is a small mill tax for day schools.

VALUE OF PROPERTY USED FOR EDUCATION

For the year 1926-1927 the value of all the schools for the blind in the United States was \$17,240,171.² For each pupil there is thus property worth \$2832. The bulk of the sum indicated represents the amount invested in public institutions. Day schools do not as a general thing have separate plants, but are housed in regular school buildings. (The value of the few private institutions, in part homes, is probably only a few hundred thousand dollars.) For new buildings, repairs, and general lasting improvements, or for the general upkeep of the property of the institutions, there is usually expended from year to year a sum slightly over half a million dollars.

COST OF MAINTENANCE OF SCHOOLS

For the maintenance of all the schools in the year 1926-1927 there was expended the sum of \$3,993,404. Of this sum 57.3 per cent is for current expenses, 13.6 per cent for new equipment, and 28.9 per cent for instruction. (In the day schools much the larger proportion of expenditures is for purposes of instruction, in some practically all.) The average cost for the support of blind pupils in all the schools is \$579. For institutions the cost ranges from \$285 to \$1175, with an average of \$630. In day schools it ranges from \$120 to \$590, in most from \$200 to \$370, with an average of \$235.³ The greatest costs are usually found in the East and the lowest in the South and West. (For higher education the amounts in different States range from \$200 to \$500 for each student, usually \$300. There is sometimes a limit upon the total amount to be allowed in a single year, or from \$750 to \$15,000.)

¹ Other educational institutions are included in the tax. On its validity, see *In re House Bill no. 168*, 21 Col., 46, 39 Pac., 1096 (1895); *People v. Scott*, 9 Col., 626, 21 Pac., 472 (1886); Report of Colorado School, 1896, p. 22.

² The value of scientific apparatus, furniture, library, etc., is reported to be \$2,151,091 (practically all in institutions).

³ See White House Conference on Child Health and Protection, "The Handicapped Child," 1933, pp. 60, 75.

The cost for the education of children in the regular public schools of the country ranges from \$50 to \$125, with an average perhaps of \$75. Thus it costs the state something like eight times as much to educate its blind children in institutions, and three times as much in day schools, as it does to educate its seeing children in their schools.

The education of blind children, then, is not an inexpensive undertaking on the part of the state. Because of the special equipment and facilities necessary for its accomplishment, it comes high, in comparison with education in general. But in this instruction the blind receive only their due, while to the state are rendered both financial returns and returns of still greater moment.

CHAPTER XXXIV

PUBLIC DONATIONS OF LAND TO SCHOOLS

GRANTS BY NATIONAL GOVERNMENT

To the schools for the blind in some of the States there have been made donations of land as a further aid to them. Such have been given either as investments the proceeds of which should be used for the benefit of the schools, or as sites for the erection of buildings to be employed for their immediate purposes. These grants have come from three public sources, namely, the National Government, the State Government, and the city or town in which the school has been located—the last often including gifts from individuals interested in the work.

Of all the donations the most important have been those from the National Government, which have been in the form of grants by Congress of tracts of the public domain for the benefit of certain of the schools in States of the West on their admission into the Union. In 1889 on the admission of Montana, North Dakota, and South Dakota, land was set aside for several public institutions, including the schools for the blind and the deaf.¹ In North Dakota the number of acres allowed for the school for the blind was 30,000; in South Dakota, 25,000; and in Montana, 50,000. Likewise when Wyoming was admitted in 1890, 30,000 acres were set aside for a school for the blind and the deaf.² On the admission of Utah in 1896, 100,000 acres were granted for the school for the blind alone.³ Finally, on the admission of Arizona and New Mexico in 1910, 100,000 acres were given for the benefit of a school for the blind and the deaf in each of these States.⁴

¹ Stat., 1889, ch. 180. Similar grants were made for the reform schools, agricultural colleges, and universities. The State of Washington was admitted by the same Act, being given 200,000 acres for "charitable, penal, and reformatory institutions," the schools for the blind and the deaf not being expressly mentioned.

² Stat., 1890, ch. 664. When Idaho was admitted the same year, 150,000 acres were donated for various institutions, the school for the blind and the deaf not being directly mentioned.

³ Stat., 1894, ch. 138. Similar amounts were allowed for institutions for the deaf and other classes.

⁴ Stat., 1910, ch. 310. In the Act of the same year admitting Oklahoma, though no mention is made of schools for the blind and the deaf among the institutions upon which land is bestowed, these seem to have shared in the grant, having land said to be worth \$350,000. See *American Annals of Deaf*, lvi., 1911, p. 206.

GRANTS BY STATES

In three States, considerable areas of land have been granted by the legislature of the State for the benefit of its school for the blind at the time of its opening. In Texas 100,000 acres were set apart for each of a number of public institutions, among which was included the school for the blind.¹ In Minnesota 100,000 acres of the State's swamp lands were bestowed upon its then joint school for the deaf and the blind.² In Michigan 16,000 acres of salt spring lands were given.³

GRANTS BY CITIES OR CITIZENS

Grants of land by cities or citizens have been small in size, and have been made primarily as an inducement to secure the location of a school.⁴ They have usually been small tracts offered by the cities directly, or more often by a body of citizens, and sometimes accompanied by a cash payment as a further consideration. These donations have come to perhaps a score of schools. Few have been large, most being of some five or ten acres.⁵

¹ On this land, see Report of Texas School, 1873, p. 15. The proceeds of this land have amounted to nearly \$200,000.

² One-half of the land given by the State went to the common school fund, and one-half to educational and charitable institutions, the school for the blind being included among the latter. See Journal of House of Representatives, 1861, p. 32.

³ The school in Arkansas was granted 700 acres by the State soon after its beginning. In Mississippi funds were received from the sale of public lands. In South Carolina, by constitutional amendment, the school for the blind and the deaf is entitled to a proportionate part of the scholarships created from the land grants by the National Government.

⁴ Land for the use of schools for the blind and the deaf may be acquired by right of eminent domain. *Hornaday v. State*, 63 Kan., 499, 65 Pac., 656 (1901).

⁵ Land of perhaps five or ten acres or less has been given to the schools in California, Iowa, Kansas, Louisiana, Massachusetts, Missouri, North Carolina, Ohio, Pennsylvania (Western), Tennessee, and Wisconsin. Somewhat larger tracts have been bestowed upon the schools in Colorado, Florida, Utah, Virginia, and West Virginia. In particular, to the schools in Idaho, New Mexico, and South Dakota each 20 acres have been given; to the school in Oklahoma, 25; to the New York State School, 50; to the school in Texas, 74; to the school for the deaf and the blind in Washington, 100; to the school for the colored blind and other classes in Oklahoma, 100; and to the school for the blind, together with that for the deaf, in Ohio, 180. Buildings for school purposes have been provided in Oklahoma, South Dakota, and West Virginia. In other States land or buildings have been offered.

CHAPTER XXXV

PRIVATE BENEFACTIONS FOR SCHOOLS

We may lastly consider to what extent the schools for the blind have been assisted from sources apart from public, that is, from private sources. We have seen that certain schools in the East—those that we have called “semi-public institutions”—had their origin in the concern of private societies, and that they were supported entirely by private funds till the state realized its duty and commenced to extend its aid, though in no instance was the dependence upon private means alone of long duration. We have also seen that in a number of States the schools were started as private affairs, in a brief time, usually, to be taken over by the state, and thus received a modicum of private aid. In addition, there have been from time to time donations from private sources to one school or another.

With respect to the greater number of schools assistance from private sources has on the whole been negligible. To less than half of the schools, all told, do we find that gifts, large or small, have come. In most of these cases the gifts have been slight, being accepted for the most part when the schools were being started, and usually ceasing soon after their establishment or after their taking over by the state. Most of the donations of any considerable size have been to schools in the East. At present in the greater number of schools private gifts are not received. To less than half a dozen—practically all the semi-public institutions of the East—are benefactions still bestowed in greater or less degree, coming as membership fees, as certain annual contributions varying in amount, or as legacies or similar donations from time to time.¹

¹ A gift made “to the trustees of the institution for the maintenance of the blind of the city of New York” was held, there being no institution with such a name, as for the New York Institute. *New York Institution for Blind v. How's Executors*, 10 N. Y., 84 (1854). A bequest to the “New York Blind Asylum” was likewise regarded as being for this school and not for the Society for the Relief of the Destitute Blind. *Welmore v. New York Institution for Blind*, 3 N. Y. Supp., 179 (1888). A bequest in South Carolina to the “asylum for the blind at Spartanburg” was regarded as for the State School at that place. *Smith v. Heyward*, 115 S. C., 145, 105 S. E., 375 (1920). See also *President of North Carolina Institution for Deaf, Dumb and Blind v. Norwood*, 45 N. C., 65 (1852). In Vermont the sum of \$50,000 was bequeathed for the “Austine Sanitarium,” which was incorporated in 1904 as a “hospital for the temporary treatment of strangers and local invalids peculiarly situated.” In 1908 the legislature of the State allowed the money to be used for the establishment at Brattleboro of what was to be known as the Austine Institution for the Deaf and Blind (the blind remaining here for a time). See Laws of Vermont, 1904, no. 276; 1908, no. 319; 1910, no. 74.

To over a dozen schools there seem to have been gifts of a few thousand dollars each, seldom more than ten or twelve thousand, and usually much less.¹ To a somewhat smaller number there have been donations of more appreciable size, approaching fifty thousand dollars or more. Not much under this sum has been given to the schools in Colorado, Connecticut, Florida, Louisiana, and Minnesota, and nearly twice as much to those in California and Maryland (the schools in Colorado and California including departments for the deaf).² To four schools the amounts have been particularly large. To the Western Pennsylvania School somewhat over a quarter of a million dollars seems to have been donated; to the Pennsylvania Institution, not far from two million; and to the New York Institute and the Perkins Institution (Massachusetts) each, over three and a half millions.³

The total amount of private gifts to schools for the blind in the United States would probably foot up to a sum not far from six million dollars.⁴

The part played by private benefactions in the providing of means of instruction of blind children has thus on the whole not been great.⁵ Yet while no small field is presented through private benevolence for enlarging and strengthening the resources of the schools, the fact that they are not recipients to a greater degree in its conveyances is not a wholly regrettable one. The schools are in reality but the agencies of the state in carrying out one of its great functions; and since it is doing no more than providing for the education of its future citizens, sightless though they are, there is an entire duty incumbent upon it to see that full educational advantages are offered to the blind as to all others of its population.

¹ Schools that seem to have received such sums are those in Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Mississippi, Missouri, Nebraska, New York (State School), North Carolina, Ohio, South Carolina, Tennessee, Virginia, and Wisconsin. In Georgia and Indiana the gifts have been in considerable part for the benefit of graduates.

² The donation in Louisiana (\$30,000) was originally raised for the American Printing House for the Blind. See *post*, p. 434.

³ To the Western Pennsylvania Institution there have been three gifts of over \$65,000 each; to the New York Institute, one of over \$100,000, and one of over \$1,000,000; to the Pennsylvania Institution, one of over \$100,000, one of almost \$200,000, and one of over \$550,000 (one source); and to the Perkins Institution, seven of over \$100,000 each, four being of over \$250,000 each. In the last named school half of the donations have been for the sole use of the kindergarten department.

⁴ Private gifts for pupils in the schools have been of various kinds: embossed literature, tickets to concerts and other entertainments (possibly with the providing of means of attendance), clothing, Christmas presents, prizes, etc., as well as money gifts in certain cases.

⁵ In not a few of the schools gifts are invited; in some they are expressly permitted. On the matter of gifts to schools, see Report of Perkins Institution, 1874, p. 35.

PART IV
INTELLECTUAL PROVISION FOR ADULT BLIND

CHAPTER XXXVI

USE OF RAISED PRINT BY BLIND

DEVELOPMENT OF SYSTEM OF RAISED PRINT

In any work of an intellectual nature for the blind, whether in connection with the schools where instruction is given, or in the larger field of service in which are embraced adults as well as children, the one great desideratum is a system of tangible typography, or of raised print, the different characters of which may be recognized by the press of the fingers—to the end that blind persons may be enabled to read from the printed page after the manner of persons who are possessed of sight. Though the consideration of such a theme might well belong with the educational treatment of the young blind, and though the matter might be presented as the means of instruction employed in the schools, the subject of raised print is one that extends so far beyond this limited use that it seems best to deal with it separately, and as an introduction to the provision for the intellectual benefit of blind adults. Hence there will here be an examination of the efforts to discover a system of tangible type, of the forms which have been developed in the course of time, and of the methods now availed of among the blind—after which will be treated the application of this type in means of benefit.

Attempts to devise characters which could be understood by the blind through their sense of touch reach far back in the epoch of human progress, perhaps to the time when letters or figures were inscribed on some substance to be read by another, and certainly to the earliest period when efforts were made to give instruction to the sightless. At a very early period doubtless letters of the alphabet were cut out of wood or other substance for the benefit of the blind. One instance of such effort is that of Didymus of Alexandria in the fourth century. Another recorded attempt, at a much later time, to find a suitable means is that of Francisco Lucas of Saragossa, Spain, shortly after the beginning of the sixteenth century, who contrived a set of letters carved on thin tablets of wood. This system was brought to Italy late in the same century, where it was modified by Rampazetto of Rome, who had letters somewhat larger cut into blocks of wood. Whether in relief or in intaglio, however, the several characters that

had been prepared could be determined by the blind only at great pains, and little use was made of either system beyond the learning of the alphabet. About this time also Girolamo Cardano of Pavia, Italy, as we have seen, made suggestions in his works as to how the blind might be enabled to read and write through the sense of touch, though nothing practicable came from his ideas.

After a century other schemes were advanced. About the middle of the seventeenth century George Harsdörffer of Nuremberg in Germany recommended the use of tablets covered with a thin coat of wax on which letters could be inscribed by means of a stylus. A quarter of a century subsequently Padre Francisco Lana Terzi, whom we have already noticed, made experiments with various combinations of angles and points, or with a kind of cipher code based upon a system of dots enclosed in squares or other figures. This work received little attention at the time, and was soon forgotten, though the conceptions lying beneath it were not entirely removed from those which were later to prove the ultimate solution of the problem. Somewhat similar schemes suggested themselves to one or two other persons. By one of them Jacques Bernouilli in the early years of the eighteenth century is said to have taught a blind child at Geneva, though he also used wax or wooden tablets in which letters were incised.

All the while other devices were called into use.¹ Various ingenious experiments were tried here and there, and at one time or another. Letters of the alphabet were pricked on paper by some pointed instrument. Pins or needles were stuck into cushions or into specially prepared paper, in the shape of letters. Ink in heavy coats, sometimes mixed with a gritty or other substance, was laid upon cards in the form of letters. Characters were cut out of paper and strung on threads to form words. The most frequent device remained letters made of wood in some wise.²

The way, however, to the desired system of raised print for the blind was to lie along a different course. This was to be in the use of metal type, which had become the basis of printing for persons with sight, and which could more easily be felt by the touch of the fingers. Among the first to turn to this means in behalf of the blind was Pierre Moreau of Paris, France, towards the middle of the seventeenth cen-

¹ In more than one instance notches were cut in sticks, or knots were tied in strings, in cunning fashion to represent the letters of the alphabet. Such devices, however, had been employed in more than one country of the world, and not always with relation to the needs of the blind.

² For favored blind persons printing presses were even set up. One such was for Maria Theresa von Paradis of Vienna, late in the eighteenth century, who printed in ink sentences already learned by her. By other devices was taught Mademoiselle de Salignac in France, whose exploits are reported by more than one writer.

tury, who devised a system of movable letters cast in lead.¹ At a date not far removed Schönberger of Königsberg employed letters of tin for like purpose. Movable letters of metal were tried by other persons.² Most of the devices composed of metal characters failed to come into general use for the reason that they proved to be too rough to the touch, and could only with difficulty be made out. Their real value lay in the fact that they were pointing in the right direction.³

The first definite step towards the solution of the problem was taken at the school for the blind at Paris which Valentin Haüy had founded in 1784.⁴ Here it was by accident that his pupil Lesueur felt the outlines of a certain letter which had been strongly impressed upon a sheet of paper.⁵ It was this discovery which was destined to be the long desired key in providing a system of raised characters such as could be perceptible to the touch of the blind. Haüy at once set about embossing books in his new-found type.⁶ In the belief that the legibility of his characters increased with their size, he tried larger and larger ones, till they became too large for really successful embossing. To secure the type with the greatest tangibility for the blind, he experimented with various ones, including Gothic, Old English, italic, and Illyrian or Slavonic, or a kind of script, which was almost square in shape; failing to find any pronounced advantages from these, he returned to the Roman letter. He used both the capital and the small letter, towards the last giving preference to the latter. A number of books were produced by Haüy. All in all, however, his system did not prove a satisfactory one; and much yet remained to be done. Followers of Haüy attempted to improve on his work, notably his successor in the school, Dr. Sebastien Guillié, but with indifferent results.

Other countries of Europe now began to display an interest in securing a suitable system of raised print. In Stuttgart, Germany, a type was devised by Koechlin, consisting of capital Roman letters in serrated form, and made with dashes or dots. There were in fact many experiments in that country with modified Roman type in broken lines—a device which in one form or other long prevailed. In Vienna, Johann Wilhelm Klein of the institution for the blind did much embossing in the early years of the nineteenth century, especially in the

¹ Moreau is said to have been without money, and was for this reason prevented from fully developing his plans.

² Among the noteworthy experiments with cast metal letters were those of about the middle of the eighteenth century by Le Nôtre du Puiseaux, who lived near Paris.

³ Means were likewise being sought to teach the blind mathematics and geography.

⁴ The year before the Philanthropic Society had had very large metal characters prepared for the blind.

⁵ The letter is said to have been "o," and the paper a funeral notice.

⁶ Letters were first of wood, which slid into a frame.

use of serrated letters, and even approaching a dot or point system, which might be said to bear a certain resemblance to the device finally evolved. Zeune in Berlin and the Abbé Carton in Bruges in Belgium at a later time also experimented with dotted lines, choosing characters in part arbitrary.¹

The scene now shifts to Great Britain in the work of developing a practicable type for the blind. The name here which deserves initial mention is that of James Gall of Edinburgh, his works being the first to appear in relief type in the English language.² In 1826 he began his experiments, which lasted over a number of years. In 1827 was issued his "First Book for Teaching the Art of Reading to the Blind," which was a kind of manual or primer, a part being in ink and a part in raised print. The characters of Gall were a modified Roman, or a sort of runic, without curves of any kind, there being employed only triangular or angular letters of the lower case. His aim was to give sharp edges, in the belief that the extremities of the letters could be better felt by the blind. Most of the works of Gall were Books from the New Testament. In 1832 was printed the Gospel of St. John, in 1837 the Epistle to the Ephesians, and later other Books.³

In connection with the beginning movements in Great Britain to secure a form of raised print for the blind, particular notice is to be given to the organized efforts of learned bodies in both England and Scotland. From these came the initial suggestion in the English language for the adoption of a system of arbitrary characters instead of the regular Roman letter, which, as more susceptible to their sense of touch, would in general be more suitable for the blind.⁴

In 1830 a prize was offered by the Society of Arts of London for the best device in raised print, but with none to compete. In 1832 by the Royal Scottish Society of Arts a gold medal was offered to the person who could prepare the best plan of printing for use by the blind. There were a score of contestants, of whom some put forward Roman characters, others substituting arbitrary systems, composed of slants, curves, angles, squares, hooks, etc.—one system being of dots, somewhat on the order of that eventually adopted. The prize was won by Dr. Edmund Fry of London, who employed a system of Roman capitals

¹ Mention should be made of the experiments, among others, of Hassenfratz and Netra in Germany and by Challant in France, about this time.

² In 1821 a blind man, Sir Charles Lowther of near York, began embossing in Haüy's type books for his own use, producing several in the next few years.

³ Towards the last a serrated form of print was tried. Gall's system was adopted by the London Society for Teaching the Blind to Read, the Religious Tract Society, and the British and Foreign Bible Association. It continued in use till a comparatively recent date.

⁴ Funds were sometimes collected expressly for the purpose.

minus their strokes. In 1834 the Book of Acts was printed in his type.¹

The next person to arise to carry on the work was another Scotchman, John Alston of Glasgow. His system consisted of capital letters, of rather sharp and wedge-like construction, somewhat on the order of Fry's system. In 1834 he printed the Gospel of St. John, in 1838 the New Testament, and in 1840 the entire Bible.² In 1838 Dawson Little-dale of London devised a system composed of both capitals and small letters.³

Useful as were the several types presented in Great Britain, most of them had characters too small for general use among the blind.⁴ They constituted, however, most important foundations for later developments.⁵ It had come to be recognized in general, for one thing, that the simpler the characters, and the sharper their outlines, the easier they were to be made out.

In our story of the development of a system of raised print for the blind we are now brought to the American side of the Atlantic. In the same year that the Pennsylvania Institution was established, 1833, the embossing of books was undertaken. In that year was printed the Gospel of St. Mark, which was the first book in raised print to appear in the United States.⁶ Both capital and small letters were tried, but the system that prevailed was of large Roman letters, very much on the order of those of Alston, with slight curves. For a time this was called the "Philadelphia type."

¹ The matter was put into the hands of a special committee. The prize was 20 sovereigns in value. The qualifications in the alphabet to be adopted had mostly to do with the form and size of the characters and the economy of printing. To Alexander Hay was extended special commendation, he submitting in addition an essay upon the subject. Others deemed worthy of particular mention were James Gall, Mungo Panton, John Lothian, Robert Milne, and John Richardson. Valuable suggestions were also made by Craig. Objections to arbitrary characters were pointed out, in that they might serve to isolate the blind.

² In 1838 Alston was awarded a prize by the Royal Scottish Society of Arts.

³ Welch was another who contributed to the progress of raised print like Litledale.

⁴ Other devices were proposed in England, not necessarily consisting of raised type systems. In 1827 a plan was offered by G. Gibson of Birmingham, of blocks with pin points representing the letters of the alphabet at one end, and outlines of letters cut in the other. In 1835 there was invented by two blind men of Edinburgh, Robert Milne and David MacBeath, a string alphabet with 7 sets of knots and spaces, to stand for the different letters. By one Major Beniowski of London between 1855 and 1860 it was proposed that in certain books the type be pressed very hard against the page, causing thereby an impression on the reverse side, which the blind could learn to read, though backwards. One book is said to have been so printed. By B. Mitford of Cheltenham in 1865 it was suggested that lines of raised print be in rows from the top of the page to the bottom on the theory that they would thus be easier for the blind to read.

⁵ Of the twenty or more systems of raised print offered in Great Britain from 1828 to 1838, only six became generally known.

⁶ See Report of Pennsylvania Institution, 1839, p. 12. See also *Poulson's American Daily Advertiser* of Philadelphia, Jan. 10, 1834. Experiments were first made with the use of pin heads. An instructor in this school, Jacob Snider by name, proved of much assistance to Dr. Julius R. Friedlander in the work.

At the Perkins Institution in Boston there were even more notable results. Hardly had this school commenced its operations when experiments were begun with types for the blind. In 1835 was printed the Book of Acts, in 1836 the entire New Testament, and in 1843 the Old Testament.¹ The letters were of angular type, consisting entirely of lower case characters, somewhat on the order of those of Gall, but smaller. The system became known as the "Boston line letter," sometimes also called the American type.² It was adopted by most of the schools of the country as they came into being, and for some years was the main type in use in the United States.³ A system of serrated characters was also proposed at this school.

In several other schools for the blind forms of raised characters were given trial. At the New York Institute a kind of phonetic system was devised in 1837.⁴ At the Virginia School in 1848 a system with both capitals and small letters was employed. At the North Carolina School in 1856 the lower case system was tried. The last important line letter system to be devised in America was that of Napoleon B. Kneass of Philadelphia in 1867, this combining capitals and lower case letters, the "Philadelphia" and "Boston" types, and for a time neither having projections below the line.

In most of the schemes so far devised, the form of raised print had alternated between capitals and small letters in the effort to discover the system best suited to the blind. The characters, furthermore, for the most part were deprived of their ceriphs, or strokes, becoming of rather Gothic construction, in order that they might the more easily be recognized. They were also given sharp corners or keen edges, to increase their tangibility. Yet no matter what modifications were effected in the shape of the letters of the Roman alphabet, and whether large or small, the characters remained relatively difficult to decipher, and reading by the blind was consequently slow and laborious.

With but limited success to reward all these efforts, it now seemed that an entirely new arrangement would have to be adopted. If the

¹ This type was the concern of Dr. Samuel G. Howe. There were a number of gifts received expressly for the purpose of embossing books. See Report of Perkins Institution, 1835, p. 9; *Boston Daily Advertiser*, July 24, 1837; *Christian Watchman*, March 18, 1836; *Christian Advocate and Journal*, May 27, 1836; *American Annals of Education*, v., 1835, pp. 135, 188, 236; *American Ladies' Magazine*, vii., 1834, p. 86; *Boston Medical and Surgical Journal*, xvi., 1837, p. 227.

² There is said to have been an agreement with respect to the system at Philadelphia and that at Boston, the former to employ the capital letter, and the latter the small letter. See Report of New York Institute, 1890, p. 23.

³ In the system of Haüy there could be printed within a space of fifty square inches 365 letters, in that of Gall 526, in that of Alston 891, in that at Philadelphia, first 290, and later 826, and in that at Boston, first 702, and later 1067.

⁴ There was also a device with grooved pasteboard employed in this school. Neither system had any great actual use.

regular Roman letter could not be further simplified, there was left only the employment of an entirely different style of character based upon some arbitrary principle—something that had already been conceived and experimented with more than once before.

Among the first to act upon this new realization was T. M. Lucas, of Bristol, England, in 1837. By him there was employed a kind of embossed stenographic or shorthand alphabet. It consisted of four lines—one vertical, one horizontal, and two oblique in different directions—at the ends of which were placed crooked heads or dots, each in a different position; to the sixteen characters thus obtained were added ten others, of curved formation, or composed of semicircles with or without dots at the ends (such dots possibly being in different positions), besides a circle and unattached dot.¹ In the same year another Englishman, J. H. Frere, of Blackheath (London), offered a system of not altogether unlike conception, his characters being rather founded upon phonetic principles, or based upon the elementary sounds. There were thirteen simple characters, and thirteen derived from these—consisting of straight lines in different positions, with a hook or curve attached at the end in different positions, or possibly with a short line extended at an angle; of semicircles in different positions; and of a circle and an unattached dot.² A number of books were printed in both these systems.³ Neither of these forms, however, despite their novelty and despite their really scientific structure, was found to afford any substantial advance upon what had gone before, and neither won any considerable acceptance.

The next step, and the last one before the true solution of the problem came into sight—though in point of time following after it—was the combination of the plan of the arbitrary selection of characters with the use of the regular Roman line letter. Such was the basis of the system invented in 1847 by Dr. William Moon, of Brighton, England, himself a blind man. For his characters he employed, of rather large size, a modified form of the capital letters, some being the bare outlines of them, and others more or less arbitrary—the latter consisting of angles, half-circles, straight lines, etc. (representing the simplest geometrical forms). All in all, nine were letters of the alphabet but little changed, thirteen simplified, and four altogether new.⁴ Though

¹ Besides the letters of the alphabet other characters and signs were possible.

² There were also possible other characters and signs. Certain infrequent letters of the alphabet were omitted. In the use of these characters the return line principle was adopted, reading being from left to right, and then with a guide from the last letter of the line to the line below, back from right to left.

³ For both systems special support was secured. That of Lucas was adopted by the London Society for Teaching and Training the Blind.

⁴ In certain respects the Moon type may be regarded as an extension of the system of

the new system seemed, on theoretical grounds, to be a retrograde movement, it turned out to be much the most successful device so far discovered to enable the blind, especially the adult blind, to read; and though having eventually to stand aside, so far as a generally practical scheme was concerned, for a different one, it proved to be a great boon to them. The Moon system, as it was called, soon became very popular, and its use has in large degree continued to the present day.

Yet notwithstanding the undoubtedly great improvement offered in this form of tactile print, and notwithstanding the distinct service rendered to the blind by it, there remained many of the difficulties in the making out of the different characters that had been experienced in connection with other systems. Furthermore, there was no way by which it could be used for the purposes of writing. In consequence, reading by the blind continued slow and tedious, while writing by them was next to impossible.

Characters in line print of every conceivable description, impressed upon paper, whether modeled after those used by persons with sight, or made of arbitrary design but with the type composed of more or less continuous lines, had now been tried in the effort to secure a system that would fully answer the wants of the blind. In none was satisfaction to be found. If the goal were ever to be attained, the quest would have to be by an entirely different way. Only one other course was to be availed of. This was through the abandonment altogether of a system of raised letters composed of lines, and the substitution for it of a system of dots, which could far more readily be recognized under the pressure of the fingers. Such a system would also be capable of being written by the blind, a very great advantage.

It was reserved for a citizen of Paris, France, to lead the way towards the right solution. Between the years 1819 and 1825 one Charles Barbier invented a system of "cells" (or groupings), containing as a basis, or when fully occupied, two vertical rows of six points each, certain combinations of which could, on phonetic principles, be made to represent the several letters of the alphabet.¹ In certain respects, however, his contribution was wanting. The size of the cell was too large for the finger immediately to take in; and being a fixed one, with large parts blank for some of the letters, occasioned a consider-

Gall. It also has resemblances to Frere's system. A few extra signs or characters are possible with it. The return line principle is adopted. The space required for it is eight times that for ordinary ink print.

¹ It is possible that the system of Barbier, who was an engineer in the French Army, and especially interested in code signalling (on the order of telegraphy), was not directly intended for the benefit of the blind.

able waste of space. Because of the peculiar orthographical arrangement, furthermore, together with the general complicated structure, there was difficulty in determining the exact meaning of each character.¹ For these reasons the scheme did not prove a workable one, but it held the rudiments of the correct system, and needed only to be modified to be rendered available for general use.²

The required improvement was close at hand. An instructor in the Paris school, Louis Braille by name, himself blind, was able shortly afterwards to put forth the necessary emendations. This he did by cutting the number of vertical dots in two, leaving three to a column, and by substituting the customary orthographic structure for the phonetic arrangement. There was thus an oblong "cell" of six possible dots, one or more in different positions representing the several letters of the alphabet, or in all sixty-three characters. The simplest and most obvious constructions were given to the first ten letters, with the remaining characters based upon these.³ Braille performed his task in 1829, though improvements were subsequently added, the system being put in its present form in 1834.⁴ The name of the inventor is perpetuated in the appellation given his system—the braille system of raised print for the blind.⁵

Perfected as was now the new type, it did not, however, come into immediate favor. It won only slight use in France, and a score of years elapsed before it was adopted at the Paris school. Later it spread to most of the countries of the Continent, where in time it achieved practically universal acceptance. In 1868 it gained access to Great Britain,⁶ where in the course of a score of years it commanded general recognition and adoption.⁷ In this country there were de-

¹ There were also included signs for various French language characters, and for punctuation.

² There had been more than one previous attempt at a point or dot system, though without definite result.

³ For the letters "a" to "j" all possible combinations of the first and second rows of dots were employed; for the letters "k" to "t" there was added to each of the foregoing letters a dot in the bottom row at the left; and for the letters "u" to "z," two dots in the bottom row (for "w" there being one dot at the right under "j"). Signs for punctuation marks, accents, etc., were also possible, as well as for mathematical and musical characters.

⁴ The work of both Braille and Barbier was formally recognized by the French Academy of Sciences.

⁵ In 1832 and ensuing years there was devised by Lachmann of Brunswick, Germany, a system with a fixed square cell having nine dots or points, the central one of which, a "master" dot, differing from the others in size and shape, appeared in all combinations, making various arrangements possible for the letters of the alphabet. In 1855 an enlarged dot system was offered in Spain.

⁶ It was first employed by the British and Foreign Bible Association.

⁷ In 1847 at Ramsgate, England, a system was proposed by G. A. Hughes, having one large dot and one small dot, the different relative positions of one to the other representing the letters of the alphabet. Towards the close of the century experiments were made with a cell and characters four points high and two points wide, by Arthur Bull and his three blind daughters, of Cambridgeshire. At the Liverpool school in 1900 an arrangement

veloped certain abbreviations or contractions, these standing singly for words and for certain phrases of very frequent occurrence (and in a few instances for syllables or combinations of letters).¹

The braille system also became known in the United States, probably not many years after its inception; and in 1860 it was introduced into one school, that in Missouri.²

In following the course of the development of raised print for the blind, we are once more brought back to the United States. It was believed in this country that further improvements could be made upon the system produced in Europe. In 1868 there was invented by William B. Wait of the New York Institute what came to be called the New York Point.³ Instead of being upright in structure, like the French model, this system is mainly horizontal, and is known as the two-level, variable base system; that is, it is two points high, and one or more points long, though in practice only three points long.⁴ In its orthographic composition, the number and the position of the dots to represent the different letters of the alphabet are chosen upon the principle of frequency of recurrence, the fewest number of them standing for the most commonly used letters.⁵ This system was not long twice the size of the braille was employed to pave the way for the latter. In 1903 a modified form of braille known as "London Point," was devised by J. Knowles, having three vertical rows, a variable horizontal extension, and the principle of frequency of recurrence, but it proved a complicated system.

¹ This system is known as Grade Two, Grade One being the original, uncontracted braille. It is sometimes referred to as English or British braille.

² See Report of Missouri School, 1860; 1862, p. 7; Report of New York Institute, 1890, p. 30. The braille system is said to have been adopted because of the presence at the time of a person of French extraction on the board of trustees.

³ Some controversy has arisen as to the actual founder of this system. It has been claimed that it was Dr. John D. Russ, the first principal of the school, and not Mr. Wait himself, who originated it, the latter but adapting it from the former. There had been more or less experimentation here from the beginning in forms of type; and it is established that Dr. Russ was familiar with the French braille, that the principle of frequency of recurrence had suggested itself to him, and that he had made trials, especially in the late 1850's and the early 1860's, with a system of points based to a greater or less extent upon the braille plan. In the Report of the New York Institute for 1866 (p. 44) it is stated that "an alphabet of this kind has been used in the institution for many years." See also Report, 1857, p. 12. In the census report for 1860 (Population of the United States in 1860, from 8th census, 1864, p. 691) reference is made to the invention of "two new dot alphabets, one of 2, and the other of 3 lines," and to "letters according to the comparative frequency of use." The invention of Mr. Wait, however, seems to have been reached without relation to Dr. Russ's efforts. Mr. Wait himself declares that he contrived his system "wholly independently of Dr. Russ," and that he did not have information as to the procedure of the latter. "Origin of New York Institution for Blind" ("Origin and Development of New York System"), 1891, p. 10. On this matter, see also Proceedings of American Association of Instructors of Blind, 1892, p. 62; In Memoriam, John Dennison Russ, 1881, p. 19; Report of Michigan Employment Institution for Blind, 1908, p. 43; Report of S. P. Ruggles to Committee of American Association of Instructors of Blind, 1872; W. H. Illingworth, "History of Education of Blind," 1910, p. 38; *Century Magazine*, lxxviii., 1909, p. 640; American Encyclopedia and Dictionary of Ophthalmology, 1916, ii., p. 266.

⁴ Extra signs are possible besides the letters of the alphabet.

⁵ Another important departure from the braille system is in the spacing arrange-

in gaining favor in the United States, and before many years it had been adopted in most of the schools for the blind.¹

In 1878 a second American point system came into being, modeled more closely after the braille in use in England, or really a rearrangement of it, and designated as modified braille. It was the invention of an instructor in the Perkins Institution named Joel W. Smith. Like its prototype, it is vertical in structure, with the six-dot cell; but like the New York Point, it makes use of the principle of frequency of recurrence for the selection of its letters. In 1892 this system, after certain changes,² was given the name of American braille. It also won its way into a number of schools, and in time came almost equally with New York Point to divide the field of raised print in the United States.

At this stage, however, instead of arriving at the end of our quest for the desired system, we are confronted with a most unfortunate situation. Instead of finding one single point system in use by the blind in America, we discover that there are two. The task now becomes that of consolidating or resolving the two types into one, or if this is not possible, the adoption of a third in their stead.

Happily, the matter was not allowed to remain at rest. The blind, together with their friends and instructors, determined to remedy the situation, and their efforts may now be said to be crowned with success. In 1900 a Tactile Print Investigating Committee was appointed by an organization of blind persons known as the American Blind People's Higher Education and General Improvement Association. In 1905, on the expansion of this body into the American Association of Workers for the Blind, including both the blind and the seeing, the committee was taken over and its scope enlarged. It was called the Uniform Type Committee, and to it was assigned the task of comparing the merits and the demerits of the several existing systems, and of considering the possibilities of a new one. Tests by it were made of every conceivable kind in the use of point types: tests of ease, of speed, of accuracy, and of other particulars, both in reading and in writing.

In 1913 a report was made, recommending as the best solution the adoption of a system to be known as the "Standard Dot System," which in large part constituted a return to the original braille form, supplemented and modified by features from both the existing Amer-

ments. In the braille the space between words is always the width of a cell; in New York Point it is an interval of two dots. In the former there is a gain in uniformity, and in the latter in the saving of space.

¹ The New York Point system was presented at the meeting of the American Association of Instructors of the Blind in 1871.

² These were mainly the introduction of a prefix to indicate capitals, and modifications in punctuation marks and contractions.

ican systems. The new system took for its basis the alphabet and figures of British braille. For capitalization and marks of punctuation it borrowed from the American braille. From the New York Point it adopted, besides its spacing arrangement, the variable base plan, though it assigned characters with a base of more than two characters to secondary positions, their purpose being in part to take the place of some of the contractions in the British braille. The entire system was thus three points high and two or more long; or a three-level, variable base system.¹

The report presented in 1913 was not acted upon immediately; the committee was directed to continue its investigations and to report anew. In 1915 when the Standard Dot System was completed, the final report of the committee was submitted and adopted. The work was endorsed by the American Association of Instructors of the Blind.²

For the advancement of measures for the general acceptance of the new system, a Commission on Uniform Type was created. In order, however, that it might have the backing of the entire English-speaking world of the blind, main efforts were put forth towards the enlistment of the support of the blind and of the workers for the blind of Great Britain. It was felt by those of that country, however, that, as their system was the one in use over a large part of the civilized world outside of the United States, and as it contained a great published literature, it might be of doubtful expediency, with perhaps little compensating gain, to give this over altogether. It was recognized at the same time that there was still much room for improvement in it. To deal with the matter, and to confer with representatives from America, there was created in England a National Uniform Type Committee.

In these circumstances, the American workers, though still of the belief that the Standard Dot System was on scientific grounds preferable to any existing type for the blind, were also persuaded that its adoption by the United States alone would virtually mean the introduction of but another variety into the already confusing forms of tactile print. Accordingly, instead of pressing further the case for it, they decided to give it up altogether, and to accept the British system, or the original braille as adapted for English use, but with the in-

¹ While thus introducing some of the elements of the existing point types, the system was not to be regarded merely as a compromise. Special characters were provided for musical and mathematical notation. In the whole arrangement certain fundamental principles were followed, based upon the extent of finger travel, the legibility of characters, the line lengths, the powers of suggestiveness, and other particulars. In the assignment of characters other than letters and figures, the principle of frequency of recurrence was applied.

² Several small works were undertaken in the Standard Dot System, including a primer entitled "Standard Dot Drill Key."

corporation therinto of certain changes, under the name of "Revised Braille,"¹ the hope being also entertained that those on the other side of the ocean would see their way at least to some extent to join forces.

This decision was made by the American Association of Instructors of the Blind in 1916, and in 1917 by the American Association of Workers for the Blind. With the new system a beginning was soon made.² The new "Revised Braille" was to be known as "Grade One and a Half"—so called because it was intermediate between Grade One and Grade Two of the English system, the former being in full spelling and without contractions, and the latter with a considerable number of contractions. It was to be supplied with full capitalization, something in which the English system was lacking, and it had certain other signs of punctuation, etc. different from those of the English.³

Following these movements there were continued negotiations between representatives of the blind in America and in England, looking to still further adjustments and compromises, and to a possible identical system of raised print for the blind of the English-speaking world.⁴

In 1932 an agreement was effected, with due ratification from all the parties concerned.⁵ What is to be called "Standard English Braille" is to consist of a slight modification of Grade Two—with the elimination of a small number of its contractions and abbreviations (those least used),⁶ and with the introduction from Grade One and

¹ The term "Revised Braille" was first employed by the British in 1905, with reference to modifications in their own system.

² In 1918 renewed approval was given by the former organization. Under the auspices of these two bodies, and with the sanction of practically all organizations for the blind in the country, the Uniform Type Commission was continued, both to secure further harmony, with also the avoidance as far as possible of duplication in published literature, and to act as an authority upon such disputed points as might arise. In 1923 its work was largely taken over by the American Foundation for the Blind, with the coöperation of the two general bodies.

³ Over two score contractions were taken over from the English. The British mathematical and musical notation was also adopted. New characters were employed to indicate italics, etc.

⁴ The chief matters as to which it was believed that helpful changes might be effected were the introduction of a proper system of capitalization; the improvement of the existing system of punctuation; the reduction or abolition of many of the contractions, or word-signs (which were believed to be peculiarly difficult for the young); the doing away with certain rules and exceptions (which were believed to add to the burden upon the memory); and a greater conformation in general to regular printing usage. By the British many of the proposed changes were not regarded as feasible or advisable. It was believed by them in particular that capitalization should be left optional, that the present system of punctuation was fairly satisfactory, and that the difficulties in the use of word-signs were exaggerated.

⁵ There was also created a committee to devise necessary printing rules, and to make minor improvements.

⁶ Under "contractions" are to be included abbreviations (or word-signs). With the latter words are in general indicated by their specially characteristic letters. The words so abbreviated are the simplest ones, and of the most frequent occurrence, the abbreviations being of a kind to be most easily recognized, some self-evident. Possibly the first

a Half of its sign for capitalization (where such is observed), for italics, and for other characters (some remaining optional, at least for a time, in England), and with like forms for Roman numerals and like methods of paragraphing, syllabification, etc.¹ In general usage as to such matters is to be standard, and is to conform as far as possible with that of regular ink print.² To the new system there is to be a gradual conversion of all American point print.³

These steps may be regarded as the practical determination of the matter of raised print in the United States, and as the definitive committing of the country to the new order. Whatever further minor adjustments may be found necessary, the quest of the blind for a serviceable and for a uniform type, as far as we can see, comes now to an end.⁴

MEANS EMPLOYED BY BLIND IN WRITING AND IN OTHER NOTATION

Not only has a special type been created by which the blind can do their reading, but with the introduction of point systems there has been provided a means to enable them to write these types, this being one of the things which gives such great advantage over the line type.⁵ Writing is now made possible by the use of a special device. This may be a frame consisting of two metal blades of equal size hinged together at one end, as a general thing about eight inches in length.

letters alone are employed; possibly vowels are omitted. Contractions consist of single signs, either standing alone or indicated by a prefix, to express more than one letter; they apply to words, syllables, or combinations of letters (and occasionally phrases). The device of contractions and abbreviations saves space, and facilitates both the writing and the reading of raised print. Grade Two can be employed more rapidly than Grade One and a Half, and much more so than Grade One. Grade Two requires 12 per cent less space than Grade One and a Half. The bulk of the literature for the blind in England is in Grade Two. (In that country there is also Grade Three, highly contracted, and but little employed.) In Standard English Braille there are several score each of contractions and abbreviations. A few new ones have been introduced.

¹ See *Outlook for Blind*, xxv., 1931, p. 135; xxvi., 1932, pp. 137, 199; Proceedings of American Association of Instructors of Blind, 1932, pp. 747, 753; Report of Special American Uniform Type Committee, 1933; Joint Committee of American Association of Instructors of Blind and of American Association of Workers for Blind, "Braille System of Reading and Writing," 1931; National Institute for Blind, "Standard English Braille," 1932. See also publications of American Foundation for Blind.

² To indicate numerals, italic letters, etc., prefixes are frequently employed.

³ The "standard" distance of the center of one dot to the center of another dot in the same cell, vertically and horizontally, is 0.09 inch; in an adjoining cell, 0.25 inch; and in an adjoining line, 0.4 inch.

⁴ One notable result is the making available of a far larger amount of reading matter for the blind.

⁵ Instruction to a certain extent is also given in some of the schools in the regular long-hand form of writing used by seeing persons (occasionally in a special form, as the "square-hand type") especially by means of pencil. While by some pupils commendable progress is made at this, with most the process is tedious and laborious. An increasing number of the blind are being taught to use the typewriter.

One of these has cut through it two or more rows of cells of the required point space, while the other consists of a grooved bed, or a base with writing "pits" drilled into it, one of the blades fitting over the other. Between these blades the paper is inserted, the one with the cell openings being placed above, and into it are impressed, with the aid of a small pointed stylus or blunt awl, dots in the desired number and position. The impressions are made from right to left, so that the protuberances will appear on the reverse side in the accustomed order, or from left to right.¹ There are writing machines also for the several point systems, some of which are adapted to stenographic work.²

For ciphering work, a rectangular frame or slate of metal or wood is employed, into the surface of which octagonal, or sometimes square, holes are cut out at regular intervals. Into these are inserted square metal pins or pegs or plugs, each with a slight projection at either end, one usually a kind of ridge and the other two points. (Several different kinds of mathematical slates are in use.) By the various arrangements possible are denoted the different numerals.³ In all the point systems the dots may be so disposed as to indicate numerals and certain of the other mathematical figures. For geometrical figures, or for higher mathematics in general, special designs (models, wire devices, etc.) are prepared.

For musical notation the point systems have likewise been found adaptable.⁴ In the teaching of geography relief maps, sometimes dissectible, and globes are employed.⁵ For the purpose of indicating to the blind, especially in the schools, the physical appearance and characteristics of various articles, substances, and creatures, both natural and artificial, animate and inanimate, there is much object teaching—through specimens, models, figures in relief, stuffed figures, toys, etc.—some schools having small-scale museums of this nature. Certain

¹ Early in the eighteenth century some such device was invented by Henry Hill. The present writing frame seems to have been invented by one Guldberg, of Copenhagen. Others have been invented independently. Constant improvements are being added.

² The first was by Frank H. Hall of the Illinois School in 1892. (There is also a machine for the Moon system, though of little practical value.) On typewriters for raised print, see *Scientific American*, cxvi., 1922, p. 179; Supp., lxxxiv., 1917, p. 206.

³ The first mathematical system for the blind was invented in 1729 by Nicholas Saunderson, the blind professor at Cambridge, England. The present systems are based on the invention of William Taylor, of York, England, in 1836. Carton, McBeath, Metcalf, and Niesen had similarly experimented. Such devices were included in the work of both Haüy and Braille. In the early systems the holes and plugs were both square. Systems with pentagonal holes and pentagonal type have also had use. With Klein and Zeune the abacus had use. Early geometrical designs were prepared by Taylor. Not a little of mathematical processes by the blind are done "in the head."

⁴ Musical notation has had a place in most systems from the time of Haüy. Much musical composition has to be memorized by the blind.

⁵ The first relief maps for the blind of which we know were those of Weissenbourg, of Mannheim, Germany, in 1792. Notable experiments upon the subject were made by Klein. At one time substances like wool or silk were used to represent mountains.

games and playthings have, furthermore, been adapted for use by the blind.¹

PRESENT SYSTEMS OF RAISED PRINT

Whatever has been achieved in the way of raised print for the blind, reading by them remains a very different operation from that availed of by the seeing.² The blind cannot do their reading as do persons possessed of the sense of sight.³ With the blind the fingers have to take the place of the eyes.⁴ The process of acquiring this new manner of reading is often a laborious one, especially to those whose blindness falls after the period of youth, or after special schooling; with such no small adjustment is necessary before tactile reading can be carried on with any degree of facility or comfort.⁵ Though among all the systems of raised print that have been evolved, the point system, or that composed of disconnected dots, has been found the best adapted for recognition by the human finger, yet difficulties inhere in the use of them all, particularly for the blind who lose sight after their fingers have grown hardened.⁶ Reading by the blind thus becomes something of an art, and something quite different from reading from the page printed in ink which lies before the eyes of those who have eyes to see.⁷

¹ On games for the blind, see *American Encyclopedia and Dictionary of Ophthalmology*, 1916, ii., p. 1116; *Popular Mechanics*, xxvi., 1916, p. 11; *Literary Digest*, Sept. 15, 1917, p. 25; *Nation*, xlv., 1888, p. 115; *Playground*, xvii., 1923, p. 347.

² Not considered here are suggested methods of "seeing" by the blind through the ear, or by means of physical sensations.

³ The immense value and benefit of radio to the blind need not be dwelt upon. See *Proceedings of American Association of Instructors of Blind*, 1932, p. 715; *American Review of Reviews*, lxix., 1924, p. 679; *School and Society*, xxxi., 1930, p. 454; *Literary Digest*, Aug. 26, 1922, p. 27; *Christian Herald*, Nov. 8, 1924; *Radio Broadcast*, vi., 1924, p. 288; vi., 1925, p. 692; *Wireless Age*, July, 1922, p. 29; Aug., 1922, p. 45; *Radio Town Crier*, June, 1929, p. 15; *Radio News*, vii., 1925, p. 146. See radio periodicals, *passim*.

⁴ There has been an experiment with a special electrical device, known as the visagraph, which changes ink print to raised characters of the same type. This is done by means of the silenium ray, or "electric eye," which conveys the impressions of the printed page to a metal sheet. The blind are thus enabled to read ordinary print by the sense of touch. See *Proceedings of American Association of Instructors of Blind*, 1932, p. 733; *Electrician*, cix., 1932, p. 253; *Literary Digest*, June 23, 1928, p. 20; *Scientific American*, cxlv., 1931, p. 113; *Popular Science Monthly*, cxix., 1931, p. 40; *Outlook for Blind*, xxiv., 1931, p. 26; *Popular Mechanics*, lvii., 1932, p. 937; *Power Plant Engineering*, xxxii., 1932, p. 888.

⁵ With the use of long-playing phonograph records (with possibly 3500 or 4000 words recorded on one side of one disc), matter of considerable length, including the contents of books, may be conveyed to the blind through the ear. Special benefit will accrue to those who have never learned to read with the fingers.

⁶ Occasionally suggestion has been made of the use of a kind of glove to be worn on the hand by the blind-deaf, marked with the regular letters of the alphabet, which are to be duly touched for the letter desired. See William Terry, "Touch Alphabet," 1917; H. T. Clark, "Talking Gloves for Deaf and Blind," 1917; *Scientific American*, cxx., 1919, p. 342; *Literary Digest*, June 11, 1910, p. 1173.

⁷ Regular printing presses, some of advanced mechanical construction, have been invented for raised print. See *World Today*, liii., 1928, p. 76; *Inland Printer*, Aug., 1928, p. 65; March, 1931, p. 58; *Scientific American*, cxxxvi., 1927, p. 397; *Popular Science Monthly*, xxxiii., 1888, p. 643; *Welfare Magazine* (Illinois), xix., 1928, 4, Nov., p. 1248;

Although one of the most important benefits, if not indeed the most important benefit, ever conferred upon the blind has been the devising of a system of raised print, yet the satisfaction with which this great achievement is to be greeted has been tempered by the circumstance that there have been in use by the blind, not one single system, but several systems. From this situation there have resulted increased difficulty and confusion in a problem already serious enough; the diversity of the systems has constituted a very real stumbling block to the intellectual progress of the blind.¹ The matter, however, as we have just seen, is now in process of solution by the general turning to one system which, with certain modifications, is to supplant all others in the English-speaking world.

The total number of systems of raised print that have been in use in the United States to a greater or less extent is seven. They are New York Point, American braille, British (or European) braille (Grade One), British braille (Grade Two), Revised braille (Grade One and a Half), the Moon type, and the Line type (or raised Roman letter).² The first four are punctographic in structure, consisting of a series of dots in various combinations; the last are of continuous impression.³ In past years the most important systems have been the New York Point and the American braille, which, dividing the field almost equally between them, have been the chief means employed for the education of blind children. They have also in very large measure been availed of by the graduates and former pupils of the schools in after life, the New York Point, as the older type, having had the more numerous adherents. British braille, containing as it does the original braille alphabet, and constituting the basis of "Revised Braille," has hitherto been employed but sparingly in the United States. With certain modifications, it is now being adopted as the general system for the country, thus superseding all other dot systems.

The two line systems, in large part giving way to the dot systems to which the world of raised print is being increasingly committed, still have a far from negligible place in American scotoic reading. Those retain their hold chiefly for the reason that they are the least difficult

Lion, Sept., 1928; *Literary Digest*, Dec. 11, 1926, p. 25; Jan. 23, 1928, p. 20. Printing is being done more and more on both sides of the sheet.

¹ Some of the blind have been familiar with one system, and others with another, though there have always been a fair number who have found it possible to master more than one system, and thus to obtain an enlarged range of reading. See *post*, p. 425.

² For illustrations of the several forms of raised print in use by the blind, see Appendix E.

³ At one time there was objection to point systems on the ground that they accentuated the differences between the blind and the seeing. See Proceedings of American Association of Instructors of Blind, 1871, p. 48. For comparison of line and dot systems, see Report of New York Institute, 1868, p. 27.

to be learned by persons beyond the school age, and who have been accustomed to the regular Roman alphabet, and consequently appeal with peculiar force to those who take up raised print in the years of adult life. This is particularly true of the Moon type, which is the simplest of all the several forms of raised type, and the one most readily acquired by hardened fingers. Raised letter, representing the form known to people with sight, has also been offered to a certain extent in some of the schools for the blind alongside one of the dot systems.¹

For the promotion of the greatest efficiency of the blind in the use of raised print, especially with regard to ease and speed of reading, efforts are being constantly made at the present moment. Studies are carried on as to the mechanics of reading—use of both hands, position of fingers, position of body, size of page, etc.²

GENERAL ABILITY OF BLIND TO READ RAISED PRINT

It is estimated that from two-fifths to one-half of the blind of the United States (1930) are able to read raised print.³ In the following table is given for the several geographic divisions of the United States the percentage of the blind reporting ability to read raised print (1910 and 1920).⁴

Of the blind of the entire country making reply to the inquiry as to their ability to read raised print, only three-tenths (30.0 per cent) answer in the affirmative. The reason for this relatively small proportion lies in large measure in the circumstance that so great a part of them lost their sight in middle and late adult life, and after school age, or at a time when finger tips are calloused, and when there is often lacking the initiative, energy, zeal, or determination to begin a new and arduous undertaking. In only the smaller number of the States have there been organized efforts on a wide scale in this direction. A very real, and to a great extent neglected, task lies before the country in making such reading knowledge available for a larger portion of the blind. At present the situation is improving, though on the whole but

¹ The old "Boston line letter" still has a few users in the United States.

² See R. B. Irwin and R. E. Wilcox, "Comparative Study of Braille Grade One and a Half and Braille Grade Two," 1927; Karl Bürklen, "Touch Reading by Blind" (translated by F. K. Merry), 1932, p. 3; K. E. Maxfield, "Blind Child and His Reading," 1928; Proceedings of American Association of Workers for Blind, 1927, p. 149; Publications of Pennsylvania Institution, no. 1, 1918 ("Preliminary Tests in Reading"); *Lancet-Clinic*, cx., 1913, p. 487; *Outlook for Blind*, March, 1924, p. 9; Sept., 1924, p. 10; March, 1925, p. 8; Sept., 1925, p. 8; *Teachers Forum*, Nov., 1932, p. 35.

³ *Outlook for Blind*, xxvii., 1933, p. 40. In Connecticut the percentage is 37.4. Report of Connecticut Board of Education of Blind, 1930, p. 121.

⁴ Statistics in this chapter are, unless otherwise indicated, from reports of the Federal Census Bureau—"The Blind Population of the United States: 1910," 1919; "The Blind in the United States, 1910," 1918; "The Blind in the United States: 1920," 1923; "The Blind Population of the United States: 1920," 1928. All figures relate to persons five years of age or over.

PERCENTAGE OF BLIND READING RAISED PRINT

GEOGRAPHIC DIVISION	PER CENT OF TOTAL	
	1910	1920
United States.....	21.4	30.0
New England.....	29.1	30.2
Middle Atlantic.....	27.3	38.2
East North Central.....	20.8	28.8
West North Central.....	21.8	27.6
South Atlantic.....	19.4	26.7
East South Central.....	13.5	21.0
West South Central.....	17.2	27.5
Mountain.....	16.0	27.5
Pacific.....	24.5	38.4

slowly.¹ It becomes better with the wider adoption of home teaching, or systematic instruction brought directly into the homes of the blind, together with increased efforts of the libraries of the land to put their printed matter at the disposal of the greatest possible number of blind persons.

The best showing is made by the blind in the Pacific and Middle Atlantic divisions, nearly two-fifths of their blind population having ability. At some distance follow, with approximately three-tenths, the New England, East North Central, West North Central, West South Central, Mountain, and South Atlantic divisions. At the rear of the procession is the East South Central division, with a proportion of a little over one-fifth. In some measure the foregoing order reflects the extent of literacy and also of attendance at school in the several geographic divisions of the United States. In the South the proportions are seriously affected by the numbers of Negroes there, among whom literacy and schooling have been relatively limited. Like conditions among Indians are a factor in the Mountain division. The relatively large proportions in the Northeastern and Far Western parts of the country are in no small degree due to the more extensive carrying on in those regions of home teaching.²

In the following table is given the percentage of the blind able to read raised print according to sex and according to race and nativity classes.

Female blind read raised print to a greater extent than male, the proportion for the former sex being a little over three-tenths, as against

¹ In 1910 the percentage was only 21.4. Increases have been most pronounced in the West. Before the introduction of the point systems only one-third of the pupils in the schools were said to be able to read.

² On home teaching for the blind, see Chapter XXXIX.

PERCENTAGE OF BLIND READING RAISED PRINT BY SEX AND BY RACE AND NATIVITY

SEX AND RACE AND NATIVITY	PER CENT OF TOTAL	
	1910	1920
Total.....	21.4	30.0
Male.....	20.3	28.3
Female.....	23.1	32.5
White.....	23.4	31.8
Male.....	22.2	30.0
Female.....	25.2	34.4
Native.....	20.4	35.5
Male.....	25.0	33.4
Female.....	28.4	38.3
Foreign born.....	11.0	14.6
Male.....	11.3	14.7
Female.....	10.4	14.3
Negro.....	8.5	14.8
Male.....	8.5	15.3
Female.....	8.6	13.9
Indian.....	3.8	10.9
Male.....	5.0	8.4
Female.....	1.3	14.4

a little under three-tenths for the latter. This difference may be due in some part to the greater sensitiveness of the fingers of females, with the consequent greater ease in the acquirement of the art of reading raised print; to them it presents fewer difficulties, and comes about more readily. The fingers of males at the same time the more often show the effects of the rough manual labor to which many of them have been accustomed. Possibly also to females is to be credited a generally greater interest in reading. The matter is affected to some extent by the larger proportions of females losing sight in youth, or at a time when there is possible attendance at a special school for the blind, with its special attention to raised print.¹

With respect to race and nativity, native whites present much the best record, having a proportion two and one-half times as great as the proportion for foreign-born whites and Negroes. With the two last named groups the proportions are larger for males than for females. The Indians have the lowest ranking of all. In a certain degree these results are only reflections of the extent of school attendance among the several groups. Library facilities and the facilities for circulating reading matter among the blind in their own homes are less available on the whole for Negroes and Indians than for whites. Of foreign-born whites, moreover, a large proportion have lost their sight in adult life,

¹ The proportion of males losing sight under twenty years of age is 34.6 per cent, and of females 40.1 per cent.

when the acquisition of tactile print is generally not easy. In this group, also, are some who have but limited acquaintance with the English language, in which practically all raised print matter in the United States is published. The larger use of raised print by males than by females among foreign-born whites and Negroes may be due to some extent to wider opportunities for males, including facilities for learning it at some establishment maintained largely for adult males.¹

In the following table is given the percentage of the blind reading raised print according to age (1910 and 1920).

PERCENTAGE OF BLIND READING RAISED PRINT ACCORDING TO AGE

AGE	PER CENT OF TOTAL	
	1910	1920
Total.....	21.4	30.0
5 to 9 years.....	36.4	48.5
10 to 14 years.....	61.9	74.7
15 to 19 years.....	65.1	78.2
20 to 24 years.....	60.2	72.0
25 to 29 years.....	53.5	62.9
30 to 34 years.....	47.8	54.3
35 to 39 years.....	40.8	44.5
40 to 44 years.....	32.6	41.2
45 to 49 years.....	26.6	32.3
50 to 54 years.....	19.7	27.4
55 to 59 years.....	13.4	23.2
60 to 64 years.....	10.1	18.0
65 to 69 years.....	6.9	13.1
70 to 74 years.....	5.6	9.3
75 to 79 years.....	3.0	6.0
80 to 84 years.....	1.7	3.8
85 years and over.....	0.9	2.2
Age not reported.....	16.1	26.9

As might be expected, the proportions reading raised type are the highest at the ages when blind persons are usually in attendance at their schools, the proportions in fact largely according with the proportions reported as in attendance at school at different ages.² For each group between ten and twenty-four years of age the proportions are approximately three-fourths. After the school ages the decline becomes rapid, at eighty-five and years over only 2.2 per cent having the ability. The small proportions able to use tactile print in late

¹ Since 1910 females have made greater progress than males in learning raised print. Among race and nativity groups the largest advance has been made by Indians, and after them by Negroes.

² See *ante*, p. 212.

years are due, on the one hand, to the recency of the affliction, many not having had sufficient opportunity for acquiring the system, and, on the other hand, to dulled sensitiveness of fingers and lessened interest in the matter.¹

In consonance with the observations just made, the greatest proportions of the blind who read raised print may be looked for among persons who have lost sight in the early years of life, or at a time when they could attend a special school for the blind where full facilities are at hand for learning the process. In the following table is given, according to age at the occurrence of blindness, the percentage able to read raised print (1910 and 1920).

PERCENTAGE OF BLIND READING RAISED PRINT ACCORDING TO AGE AT LOSS OF VISION

AGE AT LOSS OF VISION	PER CENT OF TOTAL	
	1910	1920
Total	21.4	30.0
Under 20 years	57.1	65.2
Under 5 years	61.4	69.4
5 to 9 years	63.1	66.9
10 to 14 years	53.7	58.9
15 to 19 years	36.8	46.2
Age not definitely reported	47.0	63.4
20 years or over	6.1	10.7
20 to 24 years	19.9	29.6
25 to 44 years	9.9	16.6
45 to 64 years	4.6	9.1
65 years or over	1.6	3.3
Age not reported	12.6	23.1

The proportion of the blind reporting ability to read raised type is six times as great for those who lost sight under twenty as it is for those who lost it after that age. The proportions are highest for those becoming blind under five years of age, after which period there is a steady decline to the period from fifteen to nineteen; at this point there is a sharp drop, and the decline continues regularly for the rest of life, reaching 3.3 per cent at sixty-four and over.²

In the following table is given the percentage distribution of the blind reading raised print according to previous attendance at school, and the percentage which such constitutes of the total (1920).

¹ Increases in the proportions able to read raised print since 1910 are general at all age periods, but most pronounced in the later ones, a circumstance which shows the increasing effects of home teaching.

² In comparison with 1910, there is registered a certain increase for every period, but most marked in adult life, the percentage for persons who lost sight at such time almost doubling. Here again are manifested the effects of home teaching.

PERCENTAGE OF BLIND READING RAISED PRINT ACCORDING TO PREVIOUS ATTENDANCE AT SCHOOL AND ACCORDING TO NUMBER OF TYPES READ

ABILITY TO READ RAISED TYPE	TOTAL	HAVING AT- TENDED SCHOOL		NOT HAVING ATTENDED SCHOOL	
		<i>Special School</i>	<i>Other Schools Only</i>	<i>Instruc- tion at Home</i>	<i>No Instruc- tion</i>
	PER CENT DISTRIBUTION				
Total	100.0	100.0	100.0	100.0	100.0
Reading raised type.	30.0	82.7	8.4	69.8	1.6
Reading one kind only.	23.4	63.7	7.0	56.4	1.3
Reading more than one kind.	6.7	19.0	1.4	13.4	0.3
Not reading raised type.	70.0	17.3	91.6	30.2	98.4
	PER CENT OF TOTAL				
Total	100.0	31.4	19.3	3.1	46.2
Reading raised type.	100.0	84.8	5.4	7.3	2.5
Reading one kind only.	100.0	84.0	5.8	7.6	2.6
Reading more than one kind.	100.0	87.6	4.1	6.3	2.0
Not reading raised type.	100.0	7.7	25.5	1.4	65.4
Not reporting as to ability to read raised type.	100.0	56.7	11.4	1.0	30.9

By far the best showing as to ability to read raised print is found among persons who have attended a special school for the blind. Over four-fifths (82.7 per cent) of such persons have this ability; of those who have attended other schools, only 8.4 per cent; of those who have received instruction at home, 69.8 per cent; and of those who reported no instruction, 1.6 per cent. The reason why the proportion is so high for those having instruction at their homes is that such instruction consists largely of just this use of raised print.

Of all the blind able to use raised print, almost five-sixths have been at a special institution for the blind, while about one-fifth (19.0 per cent) of the blind who have attended such institutions are able to read more than one type. This is generally about the ratio for each group between the proportion able to read raised print and the proportion able to read more than one kind.

Of all the blind reading raised print, over three-fourths (1920) confine their reading to one system, while less than one-fourth have knowledge of more than one system. Ability to use plural systems depends in the main upon the age at which sight is lost, extent of education, individual talents and application, and general surroundings. When more than one type is read, the usual combination is a "point" system with either the line letter or the "Moon"

type,¹ though by some of the blind more than one point system can be read. With the trend towards a single system of raised print, the proportion of the blind able to read more than one type will be gradually reduced.²

Females have this broader acquaintance to a somewhat greater extent than males, possibly because of their generally greater interest in tactile print, and also because of the greater sensitiveness of their fingers, which permits them the more readily to take up a second or a third system. (The proportion is notably greater for females who lose sight in early life.) Plural systems are found to the greatest extent in the extreme Northeastern and in the extreme Western parts of the country—largely in connection with the wider employment in those sections of home teaching, in which the Moon system is frequently availed of, in addition to a possible point system already learned. Plural systems prevail most extensively among foreign-born whites, and slightly less so among native whites. The proportions for plural systems, low in early life, constantly advance with each succeeding age period to late middle life, with a decline thereafter—with a corresponding situation with respect to the age at the occurrence of blindness.³

Of 10,000 borrowers from libraries for the blind in the United States (1928),⁴ it is found that European braille (British Grade One) is employed by 2.0 per cent; Revised braille (Grade One and a Half), by 72.6 per cent; British braille, contracted (Grade Two), by 20.6 per cent; American braille, by 13.5 per cent; New York Point, by 20.8 per cent; and Moon type, by 23.2 per cent (by some more than one kind being availed of).

Among the different kinds of type, the one now being generally adopted is, as we have found, "Standard English Braille" (British braille, Grade Two, slightly modified). To it all other "point" systems are giving way. (Continuous-line systems may for a long time have some users.) In its unmodified form, it has long commanded a certain small number of readers, which number of later years has materially increased. The original (European) braille has had but a bare representation in the United States. "Revised Braille" (Grade

¹ In some schools formerly special instruction was thus afforded.

² This proportion in 1910 was 26.7 per cent, as against 22.2 per cent in 1920.

³ In Tables XXX-XXXIV in Appendix A is given the percentage distribution of the blind reading raised print (and of either sex) according to kind of type employed (1910 and 1920), by geographic divisions (1920), by race and nativity (1920), by age (1920), and by age at loss of vision (1920).

⁴ *Outlook for Blind*, xxvii., 1933, p. 40. In California (1926) braille is employed by 28.5 per cent of the blind, Moon by 16.8 per cent, braille and Moon by 7.7 per cent, other types by 26.0 per cent, and unknown forms by 26.0 per cent. Report of California Department of Public Welfare, 1926, p. 147.

One and a Half, somewhat similar to "Standard English Braille") received considerable acceptance during the period when it seemed likely to be the generally accepted system, especially among the younger blind.¹ American braille, so far as it may be regarded as a distinct system, had in its day next to the largest number of followers of any of the systems in raised print.² Some of them may be expected to continue its use through life. The last system to be retired, and the one which has had on the whole the most extensive use in the United States, is the New York Point. In some areas it may be expected to linger on for some time.³ It will have a place among no small portion of the older blind, who learned it in earlier years, and will retain it to the end. Among such persons, as with American braille, it will always be retained as their favorite system, if not their sole reliance.

Among non-punctographic systems, what is known as Line letter shows signs of gradual abandonment.⁴ Possibly, however, because of the very circumstance that it is simply ordinary print in raised form, thus requiring no special study for its acquisition, it will always have at least a few followers. At present its use is confined mostly to the older blind.⁵

The Moon system as a form of raised print is apparently holding its own.⁶ It has been, and continues to be, given to those of the blind who lose sight in adult life, who are beginning to acquire a knowledge of raised print, and who, because of the lack of sufficient sensitiveness in their fingers, can take up less easily a point system, based as it is upon an arbitrary code, and to be learned only after special instruction.⁷ For such persons the Moon is much the simplest type to master.

¹ The proportion using it in 1920 was 10.9 per cent.

² It had its most extensive use in the New England States and in the Far Western parts of the country.

³ It has had the widest use in the Southern and Middle Western parts of the country. It has had particular use among Negroes—for the reason that they lived largely in the South.

⁴ The proportion using it in 1910 was 23.9 per cent; in 1920 it was 7.3 per cent—less than one-third as great. (It was used singly by 2.5 per cent, and in conjunction with other systems by 24.4 per cent.) The proportion for females is considerably larger than for males, possibly because of the greater response of the former to this, the most difficult of all systems. It has also had special use among Negroes.

⁵ The proportion for the Line letter is over six times as great among persons who become blind after twenty years of age as it is among those who become blind before that age. It is now read largely by survivors among the blind who learned it in earlier days.

⁶ The proportion of the blind using the Moon system in 1910 was 11.1 per cent; in 1920 it was 11.6 per cent. (For those using it singly the proportion was 10.1, and for those using in conjunction with other systems 16.9 per cent.)

⁷ The Moon system is used most extensively in the Northeastern and Far Western parts of the country (by from one-sixth to one-fourth of the blind), due in large part to the development of home teaching in these areas. It has relatively limited use in the remainder of the country. It is employed to a large extent among the foreign born (most of whom became blind after school age).

It has been found especially suitable for persons under home instruction in advanced years.¹

¹ The number using Moon type under twenty years of age is negligible; and under forty-five comparatively small. It is used by over one-fifth of those from forty-five to sixty-four, and by almost one-half of those over sixty-five. The proportion using it is ten times as great among those losing sight after twenty as it is among those losing it before that time. It is employed by three-fifths of those losing sight from forty-five to sixty-four, and by three-fourths of those losing it after sixty-five.

NOTE TO CHAPTER XXXVI.—On the development of systems of raised print for the blind, in Europe and in America, see James Gall, "Historical Sketch of Origin and Progress of Literature for Blind," 1834; James Gall, "Account of Recent Discoveries Facilitating Education of Blind," 1837; John Alston, "Statements of Education, Employments, and Internal Arrangements of Asylum for Blind" (Glasgow), 1836; John Alston, "Narrative of Progress of Printing for Blind," 1838; T. M. Lucas, "Instructions for Teaching Blind to Read with Universal Alphabet," 1837; E. C. Johnson, "Tangible Typography, or How Blind Read," 1853; B. G. Johns, "Land of Silence and Land of Darkness," 1857, pp. 97, 122, 156; B. G. Johns, "Blind People, Their Works and Ways," 1867, p. 108; Thomas Anderson, "Observations on Employment, Education, and Habits of Blind," 1837, p. 46; "Touch and Learn, or Typography for Blind" (by a Blind Gentleman), 1856; Sebastian Guillié, "Essay on Instruction and Amusements of Blind," 1819; Thomas Bull, "Sense Denied and Lost," 1859, p. 140; W. H. Levy, "Blindness and Blind," 1872, p. 77; Robert Meldrum, "Light on Dark Paths," 1891, p. 34; F. A. Goodale, "Literature of Philanthropy," 1893, p. 170; William Moon, "Light for Blind," 1873; John Rutherford, "William Moon and His Work for Blind," 1898; W. H. Illingworth, "History of Education of Blind," 1910, p. 8; R. C. Moon, "Essay on William Moon's Types for Blind" (International Congress for Blind, Chicago), 1893; R. C. Moon, "Education of Blind, with Especial Reference to Use of Moon Alphabet" (World's Fair, St. Louis), 1904; J. H. McHenry, "Alphabets, or Systems of Printing, Writing, and Notation of Music Best Adapted for Use of Blind," 1870; Henry Robyn, "To Trustees, Principal, and Teachers of Blind Asylum" (Missouri), 1866; Henry Robyn, "Thorough Description of Braille System," 1867; B. B. Bowen, "Blind Man's Offering," 1857; Charles Baker, "Contributions to Publications of Society for Diffusion of Useful Knowledge," 1842, pp. 49, 171; Account of New York Institution, 1833; E. H. Fowler, "Printing and Writing for Blind" (alumni association of Perkins Institution), 1890; "The Blind and Their Books"; W. B. Wait, "New York Point System of Tangible Writing and Printing for Blind," 1872; W. B. Wait, "New York System of Musical Notation and Point Writing and Printing," 1873; W. B. Wait, "Punctographic System of Tangible Musical Notation and Point Print Writing and Printing," 1882; W. B. Wait, "Origin of New York Institution for Blind (Origin and Development of New York Point System)," 1891; W. B. Wait, "True Structural Basis of Punctographic System," 1892; W. B. Wait, "Effort and Progress," 1908; W. B. Wait, "Review of Origin and Development of Embossed Literature and Music," 1890; New York System of Punctography (World's Fair, Chicago), 1893; W. B. Wait, "Key to New York Point System of Tangible Writing and Printing," 1893; W. B. Wait, "Comments on Uniform Type Question," 1908; W. B. Wait, "Phases of Punctography," 1914; W. B. Wait, "Uniform Type Question," 1915; W. B. Wait, "New Aspects of Uniform Type Folly," 1916; Uniform Type Committee, Reply to Mr. Wait, 1908; E. B. F. Robinson, "True Sphere of Blind," 1896, p. 108; Alexander Barnhill, "New Era for Blind," 1875, p. 29; S. S. Forster, "Future of Blind," 1875; R. H. Blair, "Uniform System of Printing for Blind," 1868; R. H. Blair, "Education of Blind," 1876; E. C. Johnson, Report on Apparatus and Methods Used in Instruction of Blind, Paris Exhibition, 1867; E. C. Johnson, Report on Methods of Teaching Blind and Deaf and Dumb (London International Exhibition), 1871; Reports of Juries, Exhibition of Works of Industry of All Nations, London (Official Description and Illustrated Catalogue), 1852, pp. 311, 413; T. R. Armitage, "Education and Employment of Blind," 1871; *Leicester Journal*, Feb. 12, 1869 (T. R. Armitage, "Books for Blind"); Reply of Dr. Armitage to Pamphlet by Mr. Wait, 1873; Wm. Moon, "Moon's System of Reading for Blind," 1873; J. Knowles, "London Point System of Reading for Blind," 1904; Abbé C. Carton, "Establishments for Blind in England," 1838, p. 31; Alfred Hirst, "Types for Blind," 1894; G. W. Jones, "New York Point or Braille," 1909; W. C. Posey, "Hygiene of Eye," 1918, pp. 302, 320; Frank Maciewski, "Blind Review,"

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CHAPTER XXXVII

PUBLICATIONS IN RAISED PRINT FOR BLIND

VALUE OF RAISED PRINT FOR BLIND

After a form of raised print had been found which could be used by the blind for their reading, we might expect that a literature would be produced in this type for their especial benefit. In this way they would be provided with reading matter in the same way as are people who can see, and their intellectual needs would be correspondingly met. Means for reading would thus be alike accessible for blind pupils in their schools as an instrument in their instruction, and for the blind past such stage for their general culture and profit. Through this gateway come the first ministrations to the adult blind along other than material lines, and through it the extension of facilities for mental improvement from the young to the old.

To provide reading matter for the blind on a fitting scale, several things are necessary. In the first place, there must be instituted special printing establishments able to put forth this matter, which is to include books, periodicals, and other composition. Next, to secure an extensive use of such publications, facilities must be rendered available for their dissemination and distribution from convenient centers. For this purpose an existing agency may be called into requisition to a considerable degree, namely, public libraries, both city libraries and those of other systems. Finally, to ensure the bringing of the fullest benefit in the way of mental gratification and relief to the blind, even further operations may be undertaken, with instruction carried by special agents directly into their homes. These several forms of intellectual provision for the adult blind are now to be considered in detail, the first being the preparation of printed matter in raised print.¹

¹On the value of books in raised print for the blind, see John de Liefde, "Romance of Charity," 1867, p. 395; "The Blind and Their Books, with some account of Laura Gutzlaff," Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 53; League of Nations Health Organization, Report on Welfare of Blind, 1929, p. 122; Report of New York State Department of Education, *passim*, 1910-1920; Report of Public Meeting (on Behalf of Blind, Worcester, England), 1870; Report of Conference on Matters Relating to Blind (England), 1902, p. 118; Proceedings of American Association of Workers for Blind, 1925, p. 105; *Lend a Hand*, iii., 1888, p. 318; *Girls Own Paper*, x., 1889, p. 444; *Illustrated World*, xxv., 1916, p. 654; *Scientific American*, cxix., 1918, p. 224; *Library Journal*, lli., 1927, p. 584; *Wilson Bulletin*, vi., 1932, p. 410; *Outlook for Blind*, xv., 1921, p. 76; *Inland Printer*, March, 1931, p. 58.

PRINTING HOUSES FOR BLIND

Proposals for the preparation of embossed literature for the blind are met at the outset by a very serious difficulty. This is the expense involved in the project, the cost of printing matter in raised print being far greater than of that in ordinary ink print.¹ (This is due, not to greater costs of actual composition and press work, but to the relatively small number of copies of matter in raised print which are issued, the initial costs of plates having to be absorbed in these. Costs of raised-print matter are also enhanced by its bulk, and by requirements as to binding.) For the large number of the blind the individual purchase to any considerable extent of publications in raised print is out of the question; nor is it to be thought that sufficient funds may be raised among them to render such publication in any measure an undertaking commercially profitable. Hence if the actual production of literature for the blind is to materialize, we must look for it to the enlistment of agencies not operated for gain.

In this expectation we do not find ourselves disappointed. For the furnishing of printing houses for the blind, the necessary funds have been forthcoming, not only from private sources, but from public funds as well. Public action, however, has been confined rather to the aiding of establishments already brought into existence. In this work a part has been played both by the National Government and by several individual States.

The need of a general printing plant was early felt by the blind and by their educators and friends. A few schools had commenced operations on a small scale in this direction, but their product was of most limited character.² The printing of books for the blind was found, as we have just noted, to entail too considerable an expense to be more than sparingly attempted. The only practicable scheme appeared to be the inauguration of some central house which could answer the wants of the entire country. At the first meeting of the American Association of Instructors of the Blind in 1853 the necessity of a printing establishment was strongly presented, and determined efforts began to be put forth for its creation.³

In 1855 an organization was effected in the State of Kentucky, which as the result of private interest and benevolence succeeded in

¹ A book in raised print of dimensions at least twice as great as those of a book in ink print may cost eight or more times as much. The preparation of the plates and the printing of an ordinary octavo volume of a score or so copies cost from \$500 to \$1500. Often several volumes may be required to make one "book."

² On the efforts in certain States to provide reading matter, see Report of Kentucky School, 1857, p. 8; 1859, p. 10. See also Chapter XXXVI.

³ See Proceedings, 1853; 1910, p. 5.

establishing a house at Louisville, known as the Kentucky Printing House for the Blind.¹ In 1858 this was incorporated by the legislature of the State under the name of the American Printing House for the Blind, with appropriations to provide land and buildings.² In several other States, especially in the South, the possibilities of the undertaking were realized, and, it being felt that the enterprise should be somewhat of an inter-State affair, and as such should be supported in large part by the different States, a willingness to coöperate was professed.³ In certain States, including Tennessee, Mississippi, Louisiana, Arkansas, New Jersey, Pennsylvania, and New York, auxiliary boards were formed under the authority of the legislatures, with the object of rendering assistance, and it was mainly through them that private funds were raised.⁴ In Kentucky, Louisiana, Mississippi, Tennessee, New Jersey, and Delaware distinct appropriations were made to help carry on the work, the amount being usually determined by the number of the blind who were expected to be benefited; while in Ohio, Indiana, and Illinois legislative sanction in some form was given.⁵ In nearly all these States and in others funds were supplied from private means

¹ The first funds were collected largely through the enterprise of special agents. See Report of Kentucky School, 1857, p. 7.

² Laws, 1858, p. 192; 1860, p. 247. Some \$40,000 was appropriated in the early years.

³ In recognition of the aid from the auxiliary boards created in several States the governing board was at first composed of trustees, including the presidents of such auxiliary boards. In 1861 power of visitation and control was also given to the Governors of the States making appropriations, and to the superintendents of schools for the blind assisting.

⁴ These auxiliary boards were legal corporations, some being self-perpetuating. On organization of such boards, see Proceedings of American Association of Instructors of Blind, 1880, p. 67. See also Report of American Printing House, 1869, p. 7. In several States, as Louisiana, Mississippi, and Tennessee, it was agreed that if \$25,000 were not secured within seven years, including \$2000 from public funds, the money subscribed should revert to the donors. Much litigation arose as to its application, many suits being brought to recover money, particularly after it was learned that action for the benefit of the printing house had been taken by the National Government. An action was brought by the American Printing House at Louisville against the board of trustees of Louisiana for an accounting of the funds in their hands, and for the turning over to it of such funds. The Court held a change in the charter of the house, which had altered the constitution of the governing board, to be a fundamental alteration in the organization of the enterprise, and the printing house in consequence to be barred from recovering the funds. *American Printing House for Blind v. Louisiana Board of Trustees*, 104 U. S., 711 (1881). In the State courts of Louisiana many of the donors demanded the return of their contributions. The local trustees were obliged to turn over the unclaimed balance of their funds for the benefit of the State school for the blind. See *Louisiana Board of Trustees of American Printing House for Blind v. Dupuy et al.*, 31 La. Ann., 305 (1879); same case, 37 La. Ann., 188 (1885). See also reports of Louisiana School.

⁵ Laws of Kentucky, 1865, p. 140; 1880, ch. 326; Laws of Mississippi, 1857, p. 133; Laws of Tennessee, 1857, ch. 178; 1860, ch. 124; Laws of Louisiana, 1860, no. 163; Laws of Pennsylvania, 1872, p. 1033; Laws of New York, 1868, p. 859; Laws of New Jersey, 1872, p. 69; Laws of Delaware, 1873, ch. 413; Rev. Stat., 1915, p. 246. In Tennessee the sum of \$10 was also allowed for each blind person between the ages of six and sixty. In Kentucky \$5 for each blind person was appropriated from 1865 to 1880. In New Jersey \$5000 was appropriated, in Pennsylvania \$8000, and in Delaware \$1000. See also Laws of Louisiana, 1878, ch. 27; 1888, ch. 49.

as well.¹ Joint action of the several States, however, was frustrated by the outbreak of the Civil War. The promised aid, which had always been difficult of realization, gradually fell off; and, finally, the States that had set out to assist withdrew one after the other, the last being New Jersey, Delaware, and Kentucky.

But though direct aid on the part of the States to the printing house had come to an end, the situation proved to be really changed for the better. It had been found possible to procure assistance of another and more reliable character.² As the States had dropped off in their support of the plant, its sustentation fell almost entirely on the schools for the blind. The latter did not show themselves slow to recognize their duty, and by 1879 every school with but one exception was engaged in contributing to the maintenance of the establishment.³ It was felt, however, that inasmuch as printing for the blind was a matter of national concern, the National Government should be called on directly for assistance.⁴ From the time that the first agitation had been begun for a printing house, especially on the part of the American Association of Instructors of the Blind, the advisability of a request

¹ Private funds were contributed mainly in Illinois, Indiana, Ohio, Kentucky, Tennessee, Mississippi, Louisiana, and a few other States, the amounts given usually ranging from \$5 to \$100. In Tennessee \$39,000 was raised, in Mississippi \$12,000, and in Louisiana \$30,000. Only a part of the funds secured actually reached the printing house. On efforts to raise funds, see Circular of Board of Trustees to Citizens of Kentucky, 1860; Circular of American Printing House for Blind to Friends of Blind, 1860; Circular of American Printing House for Blind, Board of Trustees of Illinois, 1869; and similar circulars. See also early reports of American Printing House.

² In 1868 Samuel P. Ruggles, of Massachusetts, offered to provide at his own expense a printing plant provided the institutions would guarantee to accept it. Proceedings of American Association of Instructors of Blind, 1871, p. 40; Report of S. P. Ruggles to Committee of American Association of Instructors of Blind, 1872; Report of Kentucky School, 1871, p. 15; *Nation*, xii., 1871, p. 431.

³ There was organized in Philadelphia in 1867, by N. B. Kneass, the National Association for Printing Literature and Musical Works for the Blind, which received some contributions, and published a few books. In 1872 it was absorbed with the Louisville house, becoming an auxiliary of it. See Proceedings of American Association of Instructors of Blind, 1871, p. 49.

⁴ There was proposed an institution to be known as the American Printing House and University for the Blind, performing the double function of a printing plant and an institution for higher education. A board was organized, circulars were sent out to secure funds, local bodies were formed to assist, and certain of the States of the South and Middle West were canvassed. The sum of half a million dollars was sought from Congress for the enterprise, which was to be located at Washington. A bill in line with these plans was offered in Congress, though it received little serious consideration. See American Printing House and University for Blind, 1868; 41st Cong., 2nd sess., H. R. 649, 1870. In one State legislative commendation was lent to the scheme, Pennsylvania requesting its members in Congress to vote for the bill. Laws, 1872, p. 1106. Most of the educators of the blind, however, did not look favorably upon the plan. The American Printing House for the Blind sent a memorial to Congress in protest. Report, 1870, p. 13. See also Proceedings of American Association of Instructors of Blind, 1871, pp. 30, 38; Report of Kentucky School, 1870, p. 8; S. G. Howe, "Warning against D. B. Sherrod," 1875; Circular of American Printing House for Blind to Friends of Blind in United States, 1870; American Printing House for Blind, History, Purposes, etc., 1931; *American Printing House for Blind v. Louisiana Board of Trustees*, 104 U. S., 711 (1881).

of this kind upon Congress had been considered; and in 1876 at the regular convention of this body, when twenty-six schools were represented, the movement came to a head, and Congress was formally asked to subsidize the house.¹

In 1879 a favorable answer was rendered. The sum of \$250,000 was set aside by Congress for the benefit of the printing house in 30-year 4 per cent bonds, from which \$10,000 a year was to be yielded, the funds being held in trust by the Secretary of the Treasury.² In 1907 when the time limit of the bonds was about to expire, the endowment was made a perpetual trust, a permanent subsidy being granted from year to year. The sum originally bestowed was reserved, and credited on the books of the Secretary of the Treasury; and in place of interest upon it, an annual appropriation of \$10,000 was fixed upon.³

In 1919, largely as a result of the greatly increased costs of printing, the annual appropriation was raised to \$40,000.⁴ In 1927 the amount was still further advanced, the total annual sum for the benefit of the printing house being fixed at \$75,000.⁵

In return for the aid from the Federal Government, it is provided that books shall be distributed free to the pupils in the several schools for the blind of the country according to the number in each. The house is allowed to sell and give away matter, but is forbidden to make a profit, all sales being at cost. The principals of the different

¹ See Proceedings, 1876, p. 67. See also *ibid.*, 1871, p. 97; 1878, p. 10; Report of American Printing House, 1870, p. 13. In Virginia the State legislature presented a resolution to Congress. Laws, 1871, ch. 198. On the general organization and development of the American Printing House, see "Brief Points in Favor of Bill Entitled 'An Act to Promote Education of Blind in Several States and Territories,'" 1879; 45th Cong., 2nd sess., H. R., Rep. no. 455, 1878; *Cong. Rec.*, 45th Cong., 2nd sess., 1879, vii., app., p. 475; 3rd sess., viii., app., p. 8; Speech of A. S. Willis, in House of Representatives, Jan. 17, 1879; Speech of Benjamin Dean, in House of Representatives, June 18, 1879; Report of American Printing House, 1878, pp. 5, 11; 1879, p. 4; 1880, p. 14; 1882, p. 7; 1914, p. 91; Proceedings of American Association of Instructors of Blind, 1871, pp. 97, 105; 1876, p. 41; 1880, pp. 14, 67; 1910, p. 3; 1912, p. 21; 1932, p. 750; Report of United States Commissioner of Education, 1879, p. clxvii.; 1881, p. ccxvii.; *American Printing House for Blind v. Louisiana Board of Trustees*, 104 U. S., 711 (1881); *Louisiana Board of Trustees of American Printing House for Blind v. Dupuy et al.*, 31 La Ann., 305 (1870); same case, 37 La. Ann., 188 (1885); Report of Wisconsin School, 1861, p. 14; Georgia School, 1876, p. 11; North Carolina School, 1884, p. 16; Pennsylvania Institution, 1914, p. 91; *Outlook for Blind*, vi., 1913, p. 97; Trustees of American Printing House, Reply to Report of Committee of American Social Science Association, 1875.

² Stat., 1879, ch. 186. See *Cong. Rec.*, 45th Cong., 2nd sess., vii., 1878, p. 4829.

³ It is directed that this amount "in lieu of reinvestment in other Government bonds, be set apart and credited upon the books of the Treasury Department as a perpetual trust fund, and the sum of \$10,000, being equivalent to the four per centum on the principal of said trust fund, be, and the same is hereby, appropriated . . . and such appropriation shall be deemed a perpetual annual appropriation." Stat., 1906, p. 460.

⁴ Stat., 1919, ch. 31. See 65th Cong., 3rd sess., Hearings before Committee on Education, H. R. 16016, 1910; H. R. Rep. no. 1128; 66th Cong., 1st sess., Sen. Rep. no. 106, 1919.

⁵ Stat., 1927, ch. 76. See 69th Cong., 2nd sess., Hearings before Committee on Education, H. R. 13453, 1926; 3rd sess., H. R. Rep. no. 1645, 1926; Sen. Rep. no. 1287, 1927.

schools for the blind are made *ex-officio* trustees (besides local trustees), and form an advisory committee for the selection of books to be printed. For the publication of certain books funds have sometimes been provided by special libraries or other organizations for the blind. Funds have likewise been contributed from private sources. Musical works and apparatus for the blind are also prepared.¹

The second important printing plant for the blind in the United States is the Howe Memorial Press in connection with the Perkins Institution near Boston.² Funds had been raised shortly after the opening of this school for the purpose of embossing books, but these were expended as fast as secured. In time special efforts were put forth to obtain a special fund.³ These had their culmination in 1881 when a general appeal for the sum of \$100,000 was issued, with especial attention to the New England States. The endowment fund now exceeds a quarter of a million dollars. An important activity is the preparation of maps, games, and various appliances for the blind. Much matter is distributed without charge.⁴

There are a number of other plants which do more or less embossing for the blind.⁵ By a few presses employed in printing periodicals for them there are occasionally published other forms of raised composition. In some of the schools for the blind, including several of the day schools, there are small plants, which are in considerable part intended for the preparation of matter for local use, though sometimes used for works for more general consumption.⁶ In certain of

¹ Day schools now share equally with institutions in the allowances. Blind persons in industrial establishments who may be regarded as benefiting by instruction in embossed print are also included. See Reports of Michigan Employment Institution for Blind, 1905-1907; Address of Trustees of American Printing House for Blind, 1907; Report of American Printing House, 1907, Exhibits A, B, C, D. Quotas are occasionally employed in the preparation of musical works. The income of the house also includes special orders from schools, libraries, and other organizations for the blind. See *ibid.*, 1918, p. 12; Report of Pennsylvania Institution, 1914, p. 91.

² In 1836 and 1846 application was made to Congress for aid, with a request for \$100,000, it being hoped that an allowance might be made for a "library" for the blind in connection with the Smithsonian fund, or from a fund similar to what had been granted for the American School for the Deaf at Hartford, Connecticut, in the form of grants of public lands. See Report of Perkins Institution, 1837, p. 13; 1846, p. 48; *Nation*, xii., 1871, p. 431.

³ See Proceedings of Public Meeting on Behalf of Printing Fund for Blind, 1881; Perkins Institution, "Appeal to Friends of Blind," 1877.

⁴ It was hoped for a time that there might be a sharing with the plant at Louisville in the subsidy from the Federal Government. See M. Anagnos, "National Subsidy Fund for Blind," 1885.

⁵ Apparatus and appliances for the use of the blind are manufactured by different concerns, some of commercial character. Certain forms are prepared through the American Foundation for the Blind.

⁶ In a few cases there are special funds for the purpose. Some of the schools that have been engaged in printing for the blind are the Perkins Institution, the New York Institute, the Pennsylvania Institution, the Western Pennsylvania School, the State schools in New York, Virginia, North Carolina, Indiana, Illinois, Missouri, Michigan, Minnesota, South Dakota, Colorado, and California, and the day schools in Chicago, Cleveland,

the special homes and industrial establishments, or in connection with the work of other organizations for the blind, there are printing plants on a greater or less scale. There are also a few such plants for the publication of religious literature. There are, finally, several philanthropic or semi-commercial printing establishments.

In addition to printing for the blind done by regular machine operation, there is a limited amount of hand transcribing of raised print carried on by interested individuals, through certain organizations for the blind, or through some social welfare or civic organization.¹

PERIODICALS FOR BLIND

There are at present in America, all told, two score or more periodicals in raised print for the blind, practically all of which have been started since the beginning of the twentieth century.² Only the smaller number of these, however, have what may be called an extensive circulation, that of the remainder being of a restricted, often of a local, character. Some are of the religious type, being conducted under the auspices of denominational bodies.³ The periodicals are for the most part monthlies (occasionally weeklies or quarterlies), varying in size from a pamphlet of a few pages to a volume of considerable size.⁴ Most are sent with little or no cost to their subscribers or readers. When a formal subscription price is set, it is seldom more than one or two dollars, possibly fifty cents, a year (except in special cases).⁵

The periodical with the widest circulation is *The Matilda Ziegler Magazine for the Blind*, which was established in New York in 1907.⁶

Milwaukee, and New York. At the New York Institute not a little of musical works has been printed. At the Illinois School there has since 1900 been much musical work prepared. (For a time at this school there was the Novel Music Embossing Company, later known as the National Embossing Press.)

¹ This work had its inauguration largely for the benefit of persons blinded in the World War. It has been promoted to a great extent by the American Red Cross, and with the coöperation of the Library of Congress. There are a considerable number of local organizations interested. See *Overland Monthly*, lxxxiv., 1926, p. 83; *Red Cross Courier*, Jan. 15, 1925, p. 7; May 15, 1925, p. 13; April 16, 1926, p. 10; April 2, 1928, p. 11; *Literary Digest*, Aug. 18, 1928, p. 30; July 26, 1930, p. 19; *Medical and Insurance Health Conservation*, xxxi., 1921, p. 110; *Outlook for Blind*, xiii., 1919, p. 67; xv., 1921, p. 111; xvi., 1922, p. 47.

² A number have been started, only to be discontinued after a longer or shorter existence.

³ Most of the independent periodicals are undertaken by blind persons.

⁴ In periodicals for the blind are generally published news, fiction, scientific articles, etc. Reproductions and quotations are quite freely allowed.

⁵ On periodicals for the blind, see American Dictionary and Encyclopedia of Ophthalmology, 1916, ix., p. 6523; C. F. F. Campbell and M. D. Campbell, "Institutions for Blind in United States," 1916, p. 109; Report of Massachusetts Board of Education, 1900, pp. 523, 537, 542; *Voices from Darkland*, June, 1916; Blind People's Higher Education and General Welfare Association, Special Bulletin, 1899; *Scientific American*, cxxxvi., 1927, p. 397; *Illustrated World*, xxxvii., 1922, p. 869; *Outlook for Blind*, *passim*; Proceedings of American Association of Instructors of Blind, 1932, p. 687; *Popular Mechanics*, xlvii., 1927, p. 367.

⁶ "During this century no single effort in behalf of the blind has brought so much happiness to those who spend their lives in darkness." American Encyclopedia and Dic-

(1928) (Chicago); *The Gospel Trumpet for the Blind* (1913) and *The Sunday School Monthly* (1917), by the Gospel Trumpet Company; *The Christian Record* (1900) and *The Christian Record Sabbath School Monthly* (1905), by the Christian Record Benevolent Association; *The International Sunday School Lessons* (1928), by the Full Gospel Publishing Company for the Blind; *The Lamp* (1929), by the Christian Association for the Blind; *The Evangel* (1930), by the Hope Publishing Company for the Blind; *The Braille Star Theosophist* (1928), by the Theosophist Book Association for the Blind; *The Herald of Christian Science* (1931) and *The Christian Science Bible Lessons* (1926); *The Jewish Braille Review* (1931), by the Jewish Braille Institute of America; and *The John Milton Magazine*, with Sunday School lessons (1933), by the John Milton Foundation.¹

There have also been periodicals (together with annuals) at certain of the schools, mostly of a local nature. These have included *The Free Press*, at the Wisconsin School (1894); *The Illinois Braille Messenger* (1930) and *The Musical Review for the Blind* (1930), at the Illinois School; *The Beacon* (1926), at the Michigan School; *The Illuminator*, at the Western Pennsylvania School (1910); and *The Red and White* (1916), at the Pennsylvania Institution.²

PREPARATION OF OCCASIONAL READING MATTER FOR BLIND

Preparation of special printed matter for the blind, other than regular books and periodicals, has likewise been undertaken. This is accomplished by a few private societies, which usually engage some special printing establishment to do the printing. For the providing of such special literature for the blind dependence is mainly upon private benevolence, together with certain receipts from sales or from special endowments. On the whole, the amount of special literature made available for the blind has not been great. That provided is largely of a religious nature.³

Foremost work of this character is that of the American Bible Society, which became interested in the blind in 1835, and which has made its work for the blind a special undertaking.⁴ To a large extent

¹ There have been other religious periodicals. The Sunday School lessons were for a time published in *The Young People's Herald*.

² Other periodicals have been *Current Events* (1901) and *The Michigan Herald for the Blind* (1911), at the Michigan School; *The Student Magazine* (1838), at the Pennsylvania Institution; *The Educational Enterprise*, at the Oklahoma School (1900); *The Braille Transcript* (music) (1898) and *The Music Survey* (1915), at the Illinois School; and *The Texas Meteor*, at the Texas School (1930). On periodicals for the blind, see Helga Lenle, "Directory of Periodicals of Special Interest to Blind," 1933.

³ On the matter of religious literature for the blind, see *Religious Education*, xvii., 1922, p. 451; *Missionary Review of World*, xlv., 1923, p. 853.

⁴ In 1816 the matter of printing the Bible for the blind was considered by the Pennsylvania Bible Society.

only portions of the Scriptures (containing in general from one to three Books) are issued, though one hundred or more complete copies are distributed every year. The work is carried on by means of voluntary contributions, endowment funds, and sales. Volumes are generally sold at less than cost of production.¹ Nominal charges (usually 25 cents per volume) are made for blind persons purchasing directly. There is usually coöperation with State Bible societies.²

The Society for Providing Evangelical Religious Literature for the Blind was organized in Philadelphia in 1874. Later it was connected with the American Tract Society with headquarters in New York, but in 1917 moved back to Philadelphia. Besides furnishing for a considerable time the Sunday School lessons, it has printed certain books for the blind. It now assists in the distribution of the Scriptures.³ Sunday School literature has been published in general by the Sunday School Foundation for the Blind, created in 1923. In 1928 was created the John Milton Foundation for Protestant Evangelical Religious Literature, for the purpose of providing books, periodical literature, and the Sunday School lessons.⁴ The general subject of literature for the blind has been given formal recognition by the Home Mission Council of the Protestant Churches, beginning in 1922.

Among Catholic agencies for printing books for the blind the principal one is the Xavier Free Publication Society, organized in New York in 1900, with a branch established in Chicago in 1911 (in 1911 taken over by the Jesuit Order).⁵ In the Protestant Episcopal Church is the Society for the Promotion of Church Work among the Blind, organized in Philadelphia in 1903 (for a time connected with City Mission work), which has had certain books of the church service and other literature embossed for the blind. In the Department of Missions of this Church also there is a committee on literature (and libraries) for the blind, inaugurated in 1920. In the work of some of the other Churches there are departments or bureaus concerned with the

¹ The Bible in Revised Braille (20 volumes) costs \$47; in English Braille (39 volumes), \$45; in New York Point (11 volumes), \$37; and in Moon type (58 volumes), \$223. Some copies of the Bible are imported. On the work of printing Bibles for the blind, see *Bible Society Record*, xxiii., 1928, p. 39; Report of American Bible Society, 1843, p. 31; 1925, p. 64, and *passim*; Report of New York Bible Society, *passim*; Proceedings of American Association of Workers for Blind, 1931, p. 42; publications of the Universal Braille Press.

² A special organization for the distribution of the Bible is the Braille Bible Society of Los Angeles (1919).

³ The governing body is composed of directors from the International Council of Religious Education and from the Council of Home Missions (interdenominational). See Proceedings of American Association of Instructors of Blind, 1928, p. 399; *Westminster Lessons Teacher*, Feb., 1932. Several thousand dollars a year are received.

⁴ It is in general under the direction of boards of missions, education, and publication of different Churches.

⁵ On Catholic publications for the blind, see *The Beacon* (New York), Jan. 27, 1909.

subject of literature for the blind, especially in their home missionary work. Special organization for the providing of literature for the blind was effected by the Adventist body in 1900 (Christian Record Benevolent Association, in Lincoln, Nebraska); by the Christian Science Church in 1926 (Christian Science Publishing Company, in Boston); and by the Theosophists in 1918 (Theosophical Book Association for the Blind, in Los Angeles). Similar work has been undertaken by the Mormon Church and by New Thought bodies. At Logansport, Indiana, is the Pax Publishing Company (1925); at Anderson, Indiana, the Gospel Trumpet Company and the Watch Tower Bible and Tract Society (1917); at Orlando, Florida, the Full Gospel Publishing Society for the Blind (1925); at Los Angeles, California, the American Brotherhood of Free Reading for the Blind (1919); at Paw Paw, Michigan, the Hope Publishing Company for the Blind (1932); and in New York City, the Christian Association for the Blind (1929). In 1931 was established in New York a committee on literature for the sightless in the National Federation of Temple Sisterhoods in connection with the Jewish Braille Institute.

Literature for the blind other than religious is also provided from time to time. At Los Angeles is the Universal Braille Press (Braille Institute of America) (1926) for the publication of various forms of literature. In Boston is the National Braille Press (in part under the Division for the Blind of the State Department of Education) (1927). At Winnetka, Illinois, is the Hadley Correspondence School (1921). By the International Association of Lions Clubs one or two magazines for blind children have been published. A few libraries for the blind have books printed for the blind on their own account. Occasionally funds for embossing books are given by private individuals or societies. Finally, it is to be noted that there are a number of publications in the Moon type printed in England which circulate in America, the headquarters for them being in Philadelphia.

ASSISTANCE OF FEDERAL GOVERNMENT IN PURCHASE OF BOOKS FOR BLIND

In addition to the aid rendered by the Federal Government to the American Printing House for the Blind in the form of appropriations for the preparation of matter in raised print for blind children in their schools, as has already been considered, notable assistance has been granted for the benefit of the adult blind in appropriations for the purchase of books for them. This was done in 1930, the appropriation consisting of \$100,000 a year.¹ Books are to be secured through the

¹ To the Library of Congress there is granted in large degree the selection of titles,

Library of Congress, for distribution among certain special libraries for the blind over the country.¹

FREE POSTAGE FOR LITERATURE FOR BLIND

With the actual preparation of reading matter for the blind, only a part of the task is accomplished in rendering it available for their use. Being much heavier and of a more bulky nature than ordinary matter, its transportation would be only at a very great cost—in fact, at such a cost as could not be borne by the blind. In this situation relief has been provided by the United States Government, which allows certain reading matter of blind persons to pass through the mails without the payment of postage. In doing this the National Government has come to the assistance of the blind in a manner hardly less marked than in the aid which has been extended in the preparation of reading matter.

In 1899 a law was enacted by Congress, permitting mail matter in raised print or characters, and unsealed, to be sent as third class matter.² In 1904 it was provided that "books, pamphlets, or other reading matter" for the blind, sent out by schools or libraries as loans, provided that packages were not over ten pounds in weight, were unsealed, and contained no advertising, should have free access to the mails.³ In 1912 this privilege was extended to periodicals for which no subscription fee was charged.⁴ In 1924 free transportation was afforded for Bibles sent to blind persons without charge or at cost.⁵

number of volumes to be printed, etc. A considerable change in the character of the literature available for the blind is thus possible.

¹ Stat., 1932, ch. 400; 1933, ch. 787 (sound-reproduction records are included). See also 71st Cong., 2nd sess., H. R. Rep. 1114; Sen. Rep. 643 (hearings on H. R. 9042), 1930; 3rd sess., H. R. Rep. 2749, 1931; *Cong. Rec.*, lxxi., 1930, p. 3536; lxxii., 1930, p. 13241; lxxiv., 1931, p. 6567; *Library Journal*, lv., 1930, p. 377; *Outlook for Blind*, June, 1930, p. 7. Previously there had been certain appropriations for books for blinded soldiers.

² Stat., 1899, ch. 362. See also Proceedings of American Association of Workers for Blind, 1905, p. 49; *West Virginia Tablet* (West Virginia School), May 17, 24, 31, 1902. In 1898 a bill was presented in the Senate to allow the letters of the blind to be transmitted as first-class matter at one cent an ounce. See 55th Cong., 2nd sess., H. R. Rep. 1545, 1898; 56th Cong., 2nd sess., Sen. Rep. 2005, 1901.

³ Stat., 1904, p. 315. See 57th Cong., 2nd sess., H. R. Rep. 365, 1903; 58th Cong., 2nd sess., H. R. Rep. 2799; Sen. Rep. 1016, 1904.

⁴ Stat., 1912, ch. 389. See 56th Cong., 2nd sess., H. R. Rep. 931, 1910. Books for the blind are placed on the free list with respect to tariff duties. Stat., 1890, p. 604; 1894, p. 538; 1897, p. 196; 1909, p. 74; 1913, p. 155; 1926, ch. 743; 1930, p. 675. Certain copyright regulations do not apply to books in raised print.

⁵ Stat., 1924, ch. 375. See 67th Cong., 4th sess., Sen. Rep. 1030 (hearings on S. 3078), 1923; 68th Cong., 1st sess., H. R. Rep. 633, 1930; Sen. Rep. 520, 1924.

CHAPTER XXXVIII

LIBRARIES FOR BLIND

OBJECT AND PLAN OF LIBRARIES FOR BLIND

With the creation of a special literature for the blind, the possibilities in connection with its dissemination are soon apparent. It is natural to suppose that upon the acquaintance of library authorities with the situation, facilities for supplying them with books in embossed print would be provided in those places where there are gathered a considerable number of blind persons.¹ Such work, moreover, as we are to find, is of a character, almost necessarily, to be of aid to the blind far beyond the mere furnishing of reading matter. It may serve in no small measure to call attention to their condition and needs, and lead to the bringing of further and more substantial relief to them.

For the purpose of providing the blind with reading matter through libraries, no special buildings are required. Suitable quarters in general libraries, stocked with the proper matter, answer quite sufficiently. In order, however, that the facilities may to the furthest degree possible be availed of, there must be a deviation from the usual policy and practice of the libraries. Arrangements must be made whereby books may be delivered in the homes of the blind, in this way obviating the necessity of personal visits on their part. The special libraries for the blind thus become not so much reading rooms in the usual sense, but rather depositories of books, subject to call, and to be sent out wherever they may be desired. In certain cases it may be found of advantage to have persons with sight come and read to the blind; but this is to be rather an incidental operation. In general the best results are to be obtained by the conveyance of the books to the homes of the blind, there to be read by the blind themselves.²

Such being the circumstances surrounding the use of books by the blind, it becomes evident that the service of the libraries need not be confined to their own immediate locality and neighborhood, but that they have a field that is bounded only by their facilities. Books may be dispatched to distant places, not only within the State, but

¹Of library work for the blind it is said: "No part of the work of the State library brings such quick and rich results in grateful appreciation." Report of New York State Department of Education, 1913, p. 365.

²In the collections are generally to be included musical works, and perhaps to some extent writing apparatus, games, etc..

outside as well; and opportunity is thus at hand not only for the work of libraries in cities, but also for State libraries, libraries in schools for the blind, and other libraries. Indeed, because of the bulky nature of the volumes themselves, and because of the free use for them of the United States mails, as we have just discovered, it is becoming increasingly the conviction among librarians, and especially among those in work for the blind, that the situation can best be dealt with by a few central libraries conveniently located, by means of which the blind can have a larger stock to draw from, and can be more expeditiously and satisfactorily served.¹

LIBRARIES AS PARTS OF CITY LIBRARY SYSTEMS

Special library work for the blind in the United States, outside of the schools, commenced when the city of Boston in 1868 placed books in raised print in a separate division of its public library. This action was followed by that in Philadelphia in 1882 when the Home Teaching Society and Free Circulating Library for the Blind was formed, with library activities as one of its main tasks. These two cities were the pioneers in the movement, and for a time were the only ones in the country. After the year 1890, however, libraries for the blind began to increase in number.²

Such special libraries for the blind have been mostly in the larger cities of the country, though there have been some in the smaller cities as well. In a number of cities they have been discontinued when it has become apparent that their readers could be supplied better or more fully from some other collection.

As a rule, attempts to establish departments for the blind in city libraries have met with a cordial response, the library authorities having generally made provision as soon as their attention has been called to the need.³ In not a few instances the libraries have been started as the result of the interest of some organization, especially a

¹ By the American Association of Workers for the Blind in 1905 the following resolution was adopted: "That it is the best sense of this convention that the public libraries of the country may more profitably expend efforts and money in the sending out of embossed books than in the maintenance of reading rooms with sighted readers for the blind." *Proceedings*, p. 51; *Library Journal*, xxx., 1905, p. 800.

² In museums and similar institutions in certain cities facilities are offered for visits by the blind, there being maintained greater or smaller collections of objects. Less bulky objects are sometimes sent out to schools for the blind and elsewhere. Occasionally special funds are given for the purpose. See Report of American Museum of Natural History (New York City), 1915, p. 50; Report of United States Commissioner of Education, 1914, i., p. 506; *Proceedings of World Conference on Work for Blind*, 1931, p. 197; *Scientific American*, cx., 1914, p. 153; *American Museum Journal*, xiv., 1914, p. 39; xviii., 1918, pp. 565, 572; *Bulletin of Pan-American Union*, xxxviii., 1914, p. 404; *Strand Magazine*, xlvii., 1914, p. 587; *Connoisseur*, lxxxvii., 1931, p. 59; *Pennsylvania School Journal*, lxxix., 1931, p. 600; *Outlook for Blind*, xiii., 1919, p. 60.

³ In the American Library Association there is a committee on work for the blind.

church, a women's club, or other local society. In some of the cities, including New York, Brooklyn, Philadelphia, and Cincinnati, private libraries were first established, later to be taken over by the municipal authorities and incorporated with the regular library systems.¹

These libraries, being thus municipal enterprises, are maintained by regular city funds.² A few of them, however, have been aided from private sources, especially in their early days when they were being started, and before they were made part of the city systems.³ Certain indirect aid has also been given, notably in the free transportation furnished by street railway companies, and later by private automobiles as well.⁴

LIBRARIES OTHER THAN CITY LIBRARIES

Besides the city libraries, there have been other libraries to enter the field of service of the blind.⁵ The first State to create a department for the blind in its State library was New York in 1896. Possibly in all there have been a score of States taking such action (including the work of State library commissions). As a general thing there has been no distinct appropriation made for the purpose, costs being paid out of the regular funds of the library.⁶ In some cases the work has been abandoned, for the most part owing to the existence of better facilities elsewhere.

From the State libraries the way leads to the National library of the country, namely, the Library of Congress at Washington. On its opening in 1897, rooms were set apart for the use of the blind.⁷ Though it has in the main served local purposes, its work being mostly con-

¹ The library in New York was founded by several blind persons, with the intention of "loaning books at a nominal sum." Rooms were at first provided by a church. In Philadelphia operations were at the beginning from the rooms of the Bible Society. In Cleveland the work started in connection with a social settlement. In Lynn, Massachusetts, the work was commenced under the auspices of the Lynn Historical Society.

² Except in the case of the very largest libraries, appropriations rarely exceed \$5000 or \$10,000.

³ Included are the libraries in New York, Philadelphia, Cincinnati, Chicago, and San Francisco. Those in the two first named cities have been the largest recipients. Apart from legacies or special gifts, contributions sometimes amount to more than a thousand dollars in one year.

⁴ In several cities the libraries operate in connection with associations for the blind.

⁵ On the work of State libraries, see Report of New York State School, 1903, p. 34.

⁶ In the State of New York certain sums have been expressly authorized by law. See Laws, 1899, ch. 569; 1900, ch. 419.

⁷ Special appropriations are made by Congress for the work. On the establishment, and on the activities, of this library, see *Library Journal*, xxxi., 1906, p. 218; *Scribner's Magazine*, xxxiii., 1903, p. 101; *Teacher of Blind* (England), iii., 1912, p. 566; *Public Libraries*, xi., 1906, p. 308; *Talks, Tales and Public Opinion*, Dec., 1900, March, 1902; *Young People's Weekly*, Dec. 15, 1901; *Ladies' World*, May, 1904; *Christian Endeavor World*, Nov. 15, 1900. It was hoped at one time that a special institution might be established at Washington, to include a bureau of information, and in coöperation with the census bureau, the Smithsonian Institution, and similar bodies. A National library was an early matter considered by those interested in the blind.

fined to the District of Columbia, it is coming to occupy a broader field and to render a really national service in the diffusion of its reading matter.¹

Among certain schools for the blind the policy has been carried on to a greater or less extent of circulating books outside their immediate confines, the Perkins Institution at Boston in 1842, early in its career, inaugurating this special work. In such schools as have engaged in it, the practice has depended in considerable part upon the accessibility of other collections.² It may be considered as one phase of the work of the schools in reaching the blind at large, or of making their educational resources available to the maximum number of persons. Books may have been sent out to former pupils only, to all of the blind of the State willing to use them, or to the blind generally without restrictions of any kind.³ There has not often been express legislative authorization for this procedure, though in a few States, as Utah, it has been a required duty of the school, and in a few others, as Illinois and Wisconsin, there have been distinct appropriations for the purpose. In most cases, with the creation of larger libraries elsewhere, those in the schools have generally contracted their endeavors.

Another agency that has been concerned with the distribution of books for the blind has consisted of the industrial establishments for the blind in several of the States. They have performed in this respect a service analogous to that of the schools. In three States the circulation of books has radiated from these centers, as a function required by the law: Maine, Michigan, and Wisconsin.⁴ There have been, finally, several small libraries in connection with certain of the homes for the blind, publishing houses for the blind, and similar institutions. By these libraries little on the whole has been accomplished. Private libraries for the blind have seldom been established.⁵

EXTENT OF USE OF LIBRARIES

Nearly all books read by the blind are gathered in libraries, there being very few individual owners. In all the United States there are probably not less than four thousand different titles of books, not

¹ In 1911 was formed a private organization, known as the National Library for the Blind, to send books to the blind of the country generally. It receives some donations. An annual appropriation is made by Congress. See *Outlook for Blind*, Sept., 1925, p. 37.

² On the creation of the Howe Memorial Press at the Perkins Institution in 1881 efforts were made to place books in libraries of cities of the New England States. See Report of Cincinnati Library Society for Blind, 1919, p. 3.

³ In a few cities there have been small libraries in connection with day schools.

⁴ See Laws of Wisconsin, 1893, ch. 290; Stat., 1931, § 47.04. In Oklahoma books have circulated from the State normal school.

⁵ In Richmond, Virginia, in 1926 a private library was created, largely for the purpose of supplying the blind with religious literature.

including pamphlets and magazines.¹ Only a limited number of copies of a particular book are printed.² Possibly not less than two hundred new books are placed in circulation each year.

The number of books (separate titles) in raised print in stock and the extent of their circulation among the blind vary not a little among different libraries. As a matter of fact, only a small portion have what may be regarded as considerable collections, the most frequent number being close to one thousand. In the smaller libraries there may be but a few score, while in the largest there may be several thousand. The number of books circulated each year ranges correspondingly from perhaps less than one thousand to forty or fifty thousand, or even more. The number of blind persons affected, or the number of borrowers, varies similarly, being for the smaller libraries less than one hundred, and for the larger several thousand.

PRESENT TRENDS IN LIBRARY SERVICE FOR BLIND

As a usual thing at the beginning most libraries for the blind sought to supply reading matter mainly in their immediate vicinity or within a more or less designated territory. But as their work expanded, and being willing to respond to calls in general, they eventually found themselves adopting a liberal policy, sending out books more and more without regard to possible restrictions. Thus in the course of time the distinctions between the several kinds of libraries, never of large moment, and in practice quite likely to be disregarded, have been more and more lost sight of. Each kind has become increasingly anxious to serve what blind persons it can, and to coöperate as far as possible with other libraries to this end. In general wherever fuller or better facilities may have developed, smaller libraries within easy reach have curtailed their activities, or have discontinued them altogether. The smaller libraries are thus being reduced in number or in effectiveness, leaving the field more and more to the larger. In other words, the tendency is to consolidate the collections of matter in raised print in the larger libraries, or in those already on a greater or less established basis, with a wider territory to be served, and with an increased efficiency of service.

¹ On the number of books in libraries for the blind, see New York Public Library, "Library Facilities for Blind in United States," 1916; C. F. F. Campbell and M. D. Campbell, "Institutions for Blind in America," 1916; L. S. Rand, "Directory of Activities for Blind in United States," 1931; American Encyclopedia and Dictionary of Ophthalmology, 1916, i., pp. 259, 270; ix., p. 6419; Report of New York State Board of Charities, 1913, i., p. 247; *Bulletin of American Library Association*, ix., 1915, p. 231; xxiii., 1929, p. 367; *Outlook for Blind*, iv., 1911, p. 197; Sept., 1929, p. 51; *Library Journal*, xxx., 1905, p. 269; *Charities and Commons*, xv., 1906, p. 641.

² Of an edition of the most important or of the most popular books, possibly three score copies are printed; of books less so, possibly half as many.

While the larger libraries on their part stand ready to send their books (especially unusual or rare material) practically anywhere in the country, they are at the same time becoming rather "regional" libraries, having a more or less definite territory for their ministrations. To a great extent the libraries may in the future be said to be distributed over the country (though without any strict division thereof), not according to any preconceived scheme, but largely as a result of their situation and of the collections they have already built up. They may in a sense come to be called parts of a great national system. For demands for books libraries closest at hand will make response as far as possible, while the more remote ones will be called upon as may be necessary.¹ Possibly in time the total number of libraries for the blind in the United States found to suffice for the country as a whole will not exceed a score.²

¹ Such a plan will be in accord with the special appropriations of the Federal Government for the purchase of books for the blind, already referred to. It will be quite appropriate likewise in view of the free mailing facilities provided by it.

² Libraries that have been suggested as the chief distributing centers are the Library of Congress, the National Library for the Blind, the libraries at Perkins Institution and the Minnesota School, in New York City, Pittsburgh, Philadelphia, Cleveland, Cincinnati, Chicago, St. Louis, New Orleans, Detroit, Denver, Omaha, Salt Lake City, and Seattle, and State libraries in Michigan (Saginaw), California, Georgia, Texas, Indiana, and New York. See *Wilson Bulletin*, vi., 1932, p. 410; *Outlook for Blind*, xxvi., 1932, p. 96; xxvii., 1933, p. 120.

NOTE TO CHAPTER XXXVIII.—On library work for the blind, see A. E. Bostwick, "American Public Library," 1910, p. 316; M. C. Chamberlain, "Manual of Library Economy," 1930, ch. 30; E. E. Allen, "Departments for Blind in Free Libraries" (Pennsylvania Library Club, occasional paper no. 9), 1899; R. C. Moon, "Books and Libraries for Blind" (Pennsylvania Library Club and New Jersey Library Association), 1905; League of Nations Health Organization, Report on Welfare of Blind, 1929, p. 135; Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 38; Proceedings of National Education Association, 1916, p. 821; Proceedings of American Library Association, 1906, pp. 78, 224; 1907, p. 39; 1926, p. 192; 1929, p. 210; Proceedings of American Association of Workers for Blind, 1905, p. 41; 1907, p. 51; 1925, p. 105; 1927, p. 202; Proceedings of American Association of Instructors of Blind, 1916, p. 15; 1918, p. 12; 1930, p. 483; Proceedings of World Conference on Work for Blind, 1931, p. 208; Report of Minnesota Commission for Blind, 1923, p. 75; Social Agencies Bulletin (California State Conference), ii., 1918, 1, Sept., p. 23; Bulletin of Kansas State Charitable Institutions, iv., 1910, Feb., p. 13; Quarterly Representing Minnesota Educational, Philanthropic, Correctional, and Penal Institutions, viii., 1908, 1, Aug., p. 15; Report of Perkins Institution, 1898, p. 26; Minnesota School, 1908, p. 31; American Library Association, reports of committee on blind; Proceedings of International Conference on Blind (England), 1911, p. 33; *Library Association Record*, xxii., 1920, p. 257; *Public Libraries*, iv., 1899, p. 171; ix., 1904, pp. 147-162; x., 1905, p. 22; xi., 1906, p. 308; *Library Journal*, xxiii., 1898 (supp.), pp. 93, 148; xxiv., 1899, p. 162; xxix., 1904, p. 236; xxx., 1905, pp. 269, 283; xxxi., 1906, p. 8, 78, 224; xxxiv., 1909, p. 115; xlv., 1920, p. 119; xlviii., 1923, p. 503; lii., 1927, p. 1064; lv., 1930, p. 377; *Bulletin of American Library Association*, ii., 1908, p. 216; iv., 1910, p. 648; v., 1911, p. 97; viii., 1914, p. 110; xiv., 1920, p. 143; xxiii., 1929, pp. 250, 367; *Scribner's Magazine*, xi., 1875, p. 136; *Scientific American*, cxix., 1918, p. 224; *Lamp*, xxvi., 1903, p. 418; *News Notes of California Libraries*, April, 1918; xv., 1920, p. 304; *Talks, Tales, and Public Opinion*, June, 1902; June, 1903; *Voices from Darkland*, March, 1913; *Civic News* (Cincinnati), March, 1913; *Charities and Commons*, xv., 1906, p. 641; *Survey*, xx., 1908, p. 12; *Advocate and Family Guardian*, May 15, 1922; *Outlook for Blind*, i., 1908, p. 139; ii., 1909, p. 108; xii., 1918, p. 51; March, 1925, p. 54; Sept., 1928, pp. 29, 54; Dec., 1928, p. 30; March, 1929, p. 48; xxvi., 1932, p. 26.

CHAPTER XXXIX

HOME TEACHING FOR BLIND

PURPOSES AND SCOPE OF HOME TEACHING

Efforts to bring intellectual benefit to the blind are not likely to be long in leading to developments beyond the providing of reading matter and its diffusion in libraries. To render the fullest advantage, one further step is found necessary. This is the bearing of means of mental uplift into the homes of the blind—a process that is called home teaching or home instruction.

In one sense, home teaching is little more than instruction for the blind projected on a scale to include adults. It may be considered a manifestation of the view of education which is being increasingly held, namely, that this is something not to be confined to youth only, but something to be offered, as far as practicable, to all the people. Yet home teaching for the blind is of a quite distinct character from all other forms of instruction. It embraces possibilities that are not given to other agencies, reaching out as it does for persons who are not accessible to them. It affords relief to a class greatly in need of mental stimulus and growth—evidenced by the large proportion in adult life, and especially in advanced years, who have not the ability nor the energy to learn to read raised print. In the intimate, sympathetic touch, and in the friendly interest and counsel, supplied in the person of the home teacher, there is peculiar benefit. In the cheer and inspiration brought, spiritual ministrations are added to intellectual, of the need of which only the sightless may know. But in this form of work there is something more still. The hands of the blind may be taught various tasks, which may prove not only an enjoyable pastime, but useful toil as well. In some cases these manual efforts may be turned to material account. Certain marketable articles may be fabricated, to be placed on sale by some suitable agency, the proceeds therefrom constituting not negligible aid. Finally, home teaching, though possible for all classes of the blind, is particularly adapted for those—comprising such a large proportion of all—who have passed the vigorous years of life, and especially so for women, who are naturally much confined to their homes and can go about but little.

Home instruction is not to be conducted by direct personal visits alone. These are to be followed and supplemented, as needs are

brought to light, by correspondence and other suitable measures. As a part of the work, efforts may be put forth to look up blind persons generally, with the possible extension of appropriate aid where called for.

Thus home teaching soon passes from the affording of intellectual instruction alone, and takes on larger bearings. It in fact may become something not a little different from the original undertaking; and may perhaps more aptly be considered as "field work" for the blind. In its expanded scope, it is practically without limits. The opportunities to be of service, whether as "home teacher" or as "friendly visitor," are perhaps as great here as can be found anywhere else in the range of human usefulness.¹

With time the conceptions of home teaching have been so broadened that they have been more and more integrated with the policies of general social work. Of later years there have been applied in greater or less measure, in progressive areas, the principles and technique of social case work, with what it implies in investigation, diagnosis, planning, record-keeping, and treatment, and with due recognition of general family relationships. In addition, the home teacher, or social worker, becomes acquainted with the medical aspects of cases under supervision, with the possibilities of beneficial treatment.²

For the practical administration and execution of home teaching, several agencies are available.³ As a private undertaking, it is likely to be one of the main activities of an association for the blind, though it may be conducted under the auspices of some other organization. If a public matter, it may be directed as an independent affair, by the schools for the blind in addition to their regular tasks, by libraries for the blind, by special State agencies for the blind, by State boards of education, or by other State departments or bureaus. Probably the most satisfactory plan is that in connection with a State commission, as a part of its specific work, since a body of this kind has peculiar opportunities of coming into contact with all the blind and of dis-

¹ "It is not too much to say that in all our educational activities, there is no service more directly helpful, where there is direct need of help, than that rendered by our instructors of the adult blind, and that no educational work supported by the State gives a larger return in social and economic benefits relative to its expense." Report of Rhode Island Board of Education, 1914, p. 69. The work is such a "notable success" that it is "now regarded as a permanent educational agency of the State." *Ibid.*, 1907, p. 26. The State "could not have provided any one method of helping the blind that would have brought more of a blessing." Report of Connecticut Board of Education of Blind, 1926, p. 11.

² "In many communities home teachers are in reality social service workers acting as specialists to the blind." *Outlook for Blind*, xxv., 1931, p. 140. See also *ibid.*, xxvi., 1932, pp. 204, 209, 214.

³ In the selection of teachers for this work, the blind themselves are often considered the most desirable, their blindness being an added qualification. They can often serve by their example to stimulate and encourage those whom they visit.

covering their several needs, to it being given the task of ministering to the blind generally. In lieu of this, perhaps the most feasible agency is the State department of education, which is in charge of the several public educational activities; or a library for the blind, which is already in relation to a considerable extent with the adult blind.

DEVELOPMENT OF FORMAL HOME TEACHING

There have no doubt always been instances in the United States of the instruction of the blind in their homes, attempted by friends or relatives of favored ones. As an organized undertaking, home teaching, like so many of the activities for the blind, is a product of the twentieth century. As a formal proceeding, it dates from the year 1882, when the Pennsylvania Home Teaching Society and Free Circulating Library was organized in Philadelphia, and when a women's club of Chicago commenced instruction to a limited extent in the homes of the blind as part of its work. Both of these enterprises were of private nature, though in the former case public recognition was given in 1905 in the form of financial aid.¹ The first State to provide for home teaching more or less directly as a public function was Connecticut, when in 1893 it created its special board of education of the blind, a specific activity being instruction in the homes of the blind.

For the first distinct legal provision, however, we turn to Massachusetts. Its action was taken in 1899 when a resolution was adopted by the legislature, making it the duty of the State board of education "to inquire into the feasibility of the instruction of the adult blind in their homes, and to report with recommendations."² The recommendations presented were favorable, and the next year an appropriation was made for the purpose of conducting the work, entrusted at first to the Perkins Institution, but in 1916 transferred to the State commission.

Rhode Island followed in 1904 when the State board of education was authorized to provide for home instruction of the adult blind.³ In 1905 when a private association for the blind was organized in New York City, and the following year in Cleveland, home teaching was given a prominent place in their programs, as was done by most of the associations which were later formed. In 1907 Delaware enacted a law providing for home instruction, which after two years was placed

¹ See Laws of Pennsylvania, 1909, ch. 498.

² Laws, 1900, Res., ch. 13; 1900, ch. 430; 1902, ch. 98; 1902, ch. 297; 1904, ch. 20; 1916, Res. ch. 201; 1918, ch. 55.

³ Laws, 1904, p. 159; 1908, ch. 1526; 1911, ch. 680; 1922, ch. 2186; 1925, ch. 593.

in the hands of the State commission.¹ In 1907 also, on the opening of a workshop for the blind in Maine, to which public funds were allowed, home instruction was made one of its duties. In 1908 when a public shop was established in Maryland, a certain amount of instruction in the home was prescribed, this having been undertaken to some extent shortly before by private enterprise, chiefly under the direction of the school. In 1908 also, on the creation of commissions for the blind in New Jersey and Ohio, home teaching was constituted one of their functions. In 1911 Colorado² and Illinois fell into line—the work in the former State being placed first under the State department of education, with the coöperation of the State school and workshop, and later under the State commission; and in the latter under the State board of administration, as the department of visitation and instruction of the adult blind. In succeeding years, as special commissions or similar agencies for the blind have been brought into being, home teaching has usually been one of their enumerated tasks.³

HOME TEACHING INCIDENTAL TO WORK OF OTHER AGENCIES

In addition to the home teaching which is carried on under more or less specially designated agencies, the work has been forwarded incidentally by other organizations, public and private. Schools for the blind in particular have begun to see the possibilities of home teaching, this often being one of the first manifestations of their concern in the adult blind; and in the absence of a State commission or other body for the prosecution of the work, have in certain instances felt themselves called upon to make some effort. (A few maintain correspondence courses of some kind.) The "field work" of certain schools, to which we have already called attention, is in some ways but an enlargement of this work. Besides the commissions for the blind, among the duties of which home teaching is specifically authorized, we may well assume that in all other commissions it is a hardly less clearly recognized function. In a few States, as Michigan, home instruction may be permitted under the State department of education.

In a number of associations for the blind likewise some form of home instruction is engaged in, this being, as we have noticed, a conspicuous feature in the work of most of them. In some of the libraries for the blind also there is afforded more or less instruction in the home

¹ Laws, 1907, ch. 142. For the first two years direction was in the hands of the Associate Justices of the Supreme Court, and then under the State commission.

² Laws, 1911, p. 3; 1919, p. 304; Comp. Laws, 1921, §§ 737-742.

³ Most of these agencies for home teaching were secured after efforts had been put forward in this direction, especially on the part of the blind themselves, or of some general organization, often a women's club. In Massachusetts the measures were largely promoted through the activities of certain graduates of the Perkins Institution.

in connection with the distribution of reading matter, with the employment in certain cases of special teachers. This has been notably the case with the libraries in Cincinnati, New York, Brooklyn, and a few other cities, of the Library of Congress at Washington, and of the State library of California. In Brooklyn a considerable amount of home teaching is conducted by the two leading charitable organizations as a part of their special work for the blind. Home teaching is likewise carried on to some extent by certain other organizations, particularly women's clubs. It is sometimes encouraged or promoted by social welfare organizations, and by fraternal orders or service clubs. Now and then correspondence courses, somewhat on the order of home teaching, have been attempted.¹

PRESENT ORGANIZATION AND EXTENT OF HOME TEACHING

Instruction of the blind in their homes as a distinct undertaking, publicly recognized, either as an officially constituted organization, or with the more or less direct financial endorsement of the state, is now found in over one-half of the Commonwealths. Its conduct is assigned to several agencies. In Alabama, Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin it is directed by the State commission or a similar body; in Maine, Maryland, Oregon, and Washington, by the State workshop (with possible assistance from the State school); in California, by the State library (with assistance from the State department of social welfare); and in Pennsylvania, under a private society with subsidies from the State. When distinct appropriations are made for the work, the amount ranges from one to ten thousand dollars a year.² In home instruction on the part of schools attention is usually given only as an extension of their work, without express statutory authorization. This is also the case in the main with libraries. When the instruction is entirely a private undertaking, the work is carried on for the most part by special local associations, and at times by some more general organization.³

¹ At a correspondence school at Winnetka, Illinois, there have been several hundred blind persons enrolled. Courses are cultural, professional, and business. See *Outlook for Blind*, xvi., 1922, p. 24; *American Magazine*, July, 1925, p. 62; *Red Cross Courier*, Feb. 1, 1928, p. 11; Proceedings of American Association of Instructors of Blind, 1930, p. 503; Proceedings of American Association of Workers for Blind, 1925, p. 89; 1927, p. 137; 1929, p. 62. By one or two service clubs correspondence courses have been conducted.

² There has usually been a slight increase in the course of the years. Aid is sometimes received from private sources.

³ Where there is more than one agency operating in a particular field, concert and co-operation are usually effected.

The total number of blind persons affected by organized home teaching in the United States is probably not less than eight thousand. The number in particular communities varies considerably, the blind in the cities being usually the most favored. So far as may be discovered, the proportion of the blind over twenty years of age benefiting ranges in the different States from about one-tenth to one-third. If women only are considered, the proportions are correspondingly increased.¹ The number of instructors employed depends for the most part upon the number of the blind to be reached, the average ratio being perhaps one teacher to every one hundred persons taught.² The smallest number of teachers in a particular organization is one or two, and the largest eight or ten. The number of visits made to the homes of the blind, or the number of lessons personally given, is in general one or two a month, with perhaps the number doubled at the beginning. There is, moreover, occasional mail matter sent out, besides special correspondence for individual cases. Most of the home teachers are themselves blind, the law often directing preference to them.³

Practically all the blind reached by home teaching are in adult life, the average age being perhaps not under fifty years. The large majority of them are women. Instruction is given in reading in raised print, and, in addition, where possible, in domestic economy, and in a few handicrafts. Handwork is taught as far as circumstances permit. The main occupation is sewing or needle work, including knitting or weaving; while guidance is offered in certain other industries. In some instances material is supplied for the making of marketable articles; and efforts are put forth for their disposal, the blind being allowed the proceeds of whatever sales are effected.⁴

¹ It is to be remembered that all blind persons are not suited for home instruction. In New Jersey, of blind persons over twenty years of age, 34.3 per cent are said to be "teachable."

² At the Pennsylvania Institution a special training course for home teachers has been established, in connection with the Pennsylvania School of Social and Health Work. See Report of Pennsylvania Institution, 1925, p. 29.

³ Special favors are sometimes extended to home teachers in their travels, often in the form of reduced fares on the railways.

⁴ The industrial aspects of home teaching are considered in Chapters LXV and LXVI.

NOTE TO CHAPTER XXXIX.—On home teaching for the blind, see William Moon, "Light for Blind," 1873, p. 66; W. J. Day, "Work among Blind," 1885; K. M. Foley, "Five Lectures on Blindness" (California State Library), 1919, p. 20; R. H. Blair, "Hints to Blind Home Students," 1837; M. Anagnos, Two Addresses, "Education of Blind in United States," 1907, p. 22; Report of Maryland School, 1907, p. 22; 1909, p. 26; Perkins Institution, 1901, p. 21; 1907, p. 70; Oregon School, 1911, p. 11; 1913, p. 8; Ohio School, 1907, p. 24; New York State School, 1902, p. 30; Iowa School, 1916, p. 6; Pennsylvania Institution, 1916, p. 32; 1924, p. 93; 1925, p. 85; Utah School, 1914, p. 11; 1922, p. 26; 1924, p. 26; Massachusetts Legislative Document, no. 1364 ("Feasibility of Instruction of Blind in Their Own Homes"), 1900; Report of Massachusetts Board of Education, 1900, p. 509 (report of special committee); 1901, p. 359; 1902, p. 347; 1908, p. 374; 1909, p. 276; Report of Conference on Matters Relating to Blind (England), 1902, pp. 14, 118, 125,

193; Report of Conference of Blind and Their Friends (England), 1890, p. 107; Proceedings of International Conference on Blind (England), 1905, p. 249; 1911, *passim*; 1914, *passim*; National Institute for Blind, Handbook for Home Teachers of Blind, 1925; Reports of Northern Counties Associations for Blind (England); Reports and other publications of home teaching societies (and of their predecessors) of England; Report of Connecticut Board of Education of Blind, 1926, p. 36; Report of Pennsylvania Commission for Blind, 1925, p. 31; Report of Missouri Commission for Blind, 1930, p. 38; Report of Massachusetts Commission for Blind, 1917, p. 25; Proceedings of Iowa Conference of Social Work, 1925, p. 100; Illinois Institution Quarterly, ix., 1918, 4, Dec., pp. 190, 254, 288; x., 1919, 3, Sept., p. 86; xii., 1921, 3, Sept., p. 56; Report of Illinois Department of Visitation and Instruction of Adult Blind, 1912, p. 5; Report of California Department of Public Welfare, 1926, p. 148; Ohio Bulletin of Charities and Correction, xvi., 1910, 1, Feb., p. 27; Proceedings of American Association of Instructors of Blind, 1930, p. 488; League of Nations Health Organization, Report on Welfare of Blind, 1929, p. 73; Proceedings of World Conference on Work for Blind, 1931, pp. 312, 379; Proceedings of American Association of Workers for Blind, 1907, pp. 59, 63; 1911, p. 32; 1925, p. 80; 1929, p. 160; Proceedings of New York State Conference of Charities and Correction, 1914, p. 241; Report of United States Commissioner of Education, 1915, i., p. 509; Report of Rhode Island Board of Education, 1916, p. 32; *Sunday at Home*, 1891, p. 21; *Modern Hospital*, ix., 1917, p. 80; *Mentor*, iii., 1893, p. 186; *Charities Review*, x., 1900, p. 194; *Charities and Commons*, xv., 1906, p. 613; *Teacher of Blind*, xv., 1927, p. 121; xviii., 1929, p. 329, and *passim*; *Beacon*, Feb., March, 1923, and *passim*; *The Blind*, i., 1905, p. 22, and *passim*; *Venture Blind Man's Quarterly*, iii., 1869, p. 89, and *passim*; *Voices from Darkland*, June, 1916; *Problem*, iv., 1903, p. 95; *Outlook for Blind*, i., 1908, p. 146; ii., 1908, pp. 93, 118; ix., 1916, p. 121; xiii., 1919, p. 47; xvi., 1922, p. 86; March, 1923, p. 20; Sept., 1926, p. 23; June, 1924, p. 46; Sept., 1925, p. 11; Dec., 1928, p. 30; xxvi., 1932, pp. 13, 204, 211, 214; xxvii., 1933, p. 8.

PART V

MATERIAL PROVISION FOR BLIND

CHAPTER XL

HOMES FOR BLIND: HOMES FOR ADULTS

POSSIBLE FORMS OF MATERIAL RELIEF FOR BLIND

From the various provisions which have been made for the intellectual benefit of the blind—the special schools which are offered to the young, and the several agencies which minister to the adult—we turn to provisions of quite different character. We come now to the consideration of the measures that have been adopted for the material assistance of the blind—measures designed to a greater or less extent to meet their physical wants.

In an earlier place we have dwelt at length upon the economic condition of the blind. We have seen what proportion are able to support themselves. We have also seen upon what means the remainder, consisting of the greater number, have to depend for their subsistence. In the present connection we are to examine the steps that have been taken of a systematic character to render appropriate relief. Material aid, it is found, may be extended in three forms. First, special homes may be established, where the blind may be maintained at public or at private expense. Second, special industrial establishments may be brought into being, or other industrial assistance afforded, for whatever portion of the blind may be enabled to a greater or less extent to contribute to their self-support. Third, a system of pensions may be devised, by which regular public grants are allowed to the blind, or indemnities of some sort may be provided for the loss of sight.

There is, indeed, a fourth method of treating the material wants of the blind, namely, a response by the solicited to appeals in the nature of mendicancy. As to the public giving of alms it need but be said that the practice, widely diffused as it is, is of a character to have only an ill effect upon the recipient, while amounting to no effective relief, having no constructive values, and opening a rich field to impostors. Whether simply refusing to accept work or really incapacitated or infirm, blind persons should be provided for through other means than mendicancy. In fact, the procedure is so undesirable and objectionable on general principles that to mention it is virtually to condemn it.

OBJECT OF HOMES FOR ADULT BLIND

We shall devote our attention first to homes for the adult blind, and next to homes for certain blind children. Though special homes for adults may seem entitled to initial consideration, yet as a practical means for ameliorating their condition as a whole, they are found at the outset to run counter to the now prevailing attitude of society with respect to such form of relief for any portion of the population—namely, that special institutions are *per se* objectionable, and are to be accepted only as a last resort, and when no other provision is at hand. Particular establishments, which are essentially little more than asylums, and which involve the continued segregation of the inmates as a separate colony of human beings, based upon a common infirmity, are today looked upon with disfavor, and are held to be mainly given over for the reception of mental defectives and of criminals.¹ For the remaining elements of the population, including the blind as a class, to whom material aid is to be extended, relief is to be looked for by different means.

As with most other groups in society, the blind should be permitted as far as possible to remain in their own homes and with their own people. For those who have no families or homes of their own, the most desirable procedure is placing out in private homes with relatives or with friends, or under some special boarding arrangement. Because, however, of the particular care and trouble believed to be thus entailed, and because of the greater responsibilities believed to be incurred, this is not to be expected except in a few instances. For like reasons, and because of the limited number of general homes available, including both homes for the aged and homes for the infirm, and with the already heavy demands upon their accommodations, little is to be expected here.²

¹ A proposal has been made of occupational colonies, especially for the partially blind, with voluntary residence, and with the carrying on of farming as far as possible. Persons who are received are to be tried out, those giving promise of industrial capacity along other lines being transferred elsewhere, and those not giving such promise remaining permanently. See Report of Massachusetts Commission for Blind, 1915, p. 10. See also Reports of Ten-Year Survey Committee on the Work of Massachusetts Commission, 1916, p. 37; Report of Supervisor of Administration Relative to Advisability of Providing Pensions for Needy Blind, Massachusetts, 1917, Senate no. 326; Massachusetts Commission, Statement I, Pensions or Relief.

² Some homes, especially for the aged, require fairly good health on the part of applicants for admission. Homes for incurables do not as a rule admit the blind. See *Outlook for Blind*, ii., 1908, p. 37. Among religious or other groups which provide homes for the aged to a relatively considerable extent, an appreciable proportion of the aged blind may be thus cared for. In the few homes for the deaf there are frequently one or more deaf-blind persons (especially the New England Home for Deaf-Mutes at Danvers, Massachusetts, and the Pennsylvania Home for Aged and Infirm Deaf, at Torresdale, Pennsylvania). In some schools for the blind there have in the past been allowed to remain certain blind persons without other means of support. In public almshouses there are now and then special quarters for the blind.

With regard to a certain number of the blind, however, the theoretical objections to special homes may not have full application. For the aged and infirm among them, particularly women, who have no homes of their own or friends to care for them, special institutions or retreats exist as their only hope—and indeed for some cases are positively called for. Such may well be provided in whatever communities there are a sufficient number of blind persons whose needs can be met only in this manner. No inconsiderable field is opened up in the matter for private philanthropy, and perhaps also for public action, though the duty of the state may in part be discharged by aid to such private institutions as are called into existence.

PRESENT EXTENT AND ORGANIZATION OF HOMES

The first homes for the blind to be established were in the year 1868 in three different cities—the Pennsylvania Industrial Home for Blind Women in Philadelphia,¹ the Home of the Society for the Relief of the Destitute Blind in New York City (Bronx),² and the Blind Girls' Home in St. Louis.³ For nearly a score of years these remained the only homes for the blind in the country, though after this time they have been established in fairly rapid succession. In 1890 was opened St. Joseph's Home for the Blind in Jersey City;⁴ in 1895, St. Joseph's Home (Asylum) for Blind Girls and the Home for the Blind of the Church Charity Foundation, both in New York City (the

¹ In 1851 efforts were put forth on the part of the Pennsylvania Institution to secure a special retreat, to be known as the "Home for the Indigent Blind." It was hoped that the property of the "Wills Hospital for the Indigent Blind and Lame," founded in Philadelphia in 1834, might be disposed of for the purpose. The present home resulted in part from the unsuccessful efforts in 1865 of several blind girls to conduct a store, as well as from the realization that a school was not a suitable place for the care of adults.

² In 1874, after the failure of several forms of industrial provision in New York, a temporary home was established, to which some donations were made. About the same time there was consideration of a public home or retreat for the indigent blind of the State, especially for those in hospitals, the cost of the inmates to be borne in part by the several counties. In 1873 a home of this kind was incorporated, though it failed to materialize. Laws, p. 1179. In 1881 a commission was created to report on the advisability of establishing a State home, and if necessary to purchase a site therefor. Laws, ch. 85. In 1883 a resolve of a similar tenor was adopted, the State board of charities being directed to ascertain the number and condition of the adult blind, and to report on the feasibility of a special home. Senate Resolution, 1883. In both instances a home was advised against, such being regarded as inexpedient, because of the "unjust partiality" which would thus be shown to the blind, and because of the expense which would be involved. See Senate Documents, 1884, no. 6; Report of New York State Board of Charities, 1883, p. 123; Special Report of New York State Board of Charities . . . as to Establishment of State Asylum for Indigent Blind, 1884.

³ This home was brought about through the efforts of the "Girls' Industrial Band," composed of alumnae of the Missouri School. In 1884 it was taken over by the Young Women's Christian Association. See Report of Missouri School, 1876, p. 14; Brief History of Blind Girls' Home of St. Louis, 1902.

⁴ In 1890 was created at Bayonne, New Jersey, the Home of Our Lady of Perpetual Help, which continued nearly two score years.

former in Staten Island and the latter in Brooklyn); in 1897, the Home for the Blind in Washington (in 1924 called the Hurt Home); in 1901, the Blind Girls' Home in Nashville; in 1903, the Clovernook Home for the Blind near Cincinnati; in 1905, the Memorial Homes for the Blind, in Worcester, Massachusetts (James A. Partridge Home for women, and Whitcomb Hall (1920) for men); in 1906, the Chapin Memorial Home for the Aged Blind in Philadelphia; in 1910, the James A. Woolson Home (for blind women) in Cambridge, Massachusetts; in 1914, the Catholic Center in New York City (Manhattan); in 1915, the Iowa Home for Sightless Women in Des Moines; in 1916, the Annette P. Rogers home in Boston; in 1917, a home for blind women in Kansas City; in 1921, a home for blind women (in 1925 for blind men also) in Yonkers, New York; in 1922, a home for blind girls in Nashville (under State commission); in 1923, a home in New York City (Queensborough); in 1926, the Friendly Lodge for blind girls in New York City (Brooklyn); in 1928, the Fisher Home for blind girls in Boston; in 1929, a home for blind women in Albany, New York; and in 1930, the Torrance home for blind girls in Pittsburgh.

There are thus at present in the United States a few more than a score of special homes for the adult blind, as distinguished from industrial establishments, that is, homes in which work is not necessarily required or expected from the inmates in return for their support, or which have not been organized primarily for industrial purposes.¹ They are found in ten States, mostly in the East and Middle West: Massachusetts, New York, New Jersey, Pennsylvania, District of Columbia, Ohio, Tennessee, Missouri, Iowa, and Ohio.² In Missouri and Tennessee each there are two, in Pennsylvania three, in Massachusetts four, and in New York eight.³

All these homes (except one at Nashville, Tennessee, under the State commission) are private affairs, either under the control of some religious body, or under the direction of an association for the blind or of a society organized for the express purpose of conducting a home.⁴

¹ For table with respect to homes for the blind, see Appendix C.

² Some homes have been secured through the instrumentality of the blind themselves, especially blind women. One or two have been created after the discovery of the failure of industrial provision. (On the special home [Evergreen] for the war-blinded at Baltimore [1918-1925], see *post*, p. 636). In a few States special agencies for the blind are given power to consider the advisability of the creation of homes.

³ Efforts are in progress to establish other homes for the blind, especially for blind women, in Cleveland, Indianapolis, Raleigh, Little Rock, Hartford, and elsewhere. In Detroit, a special home has been made possible, the charter of the city being amended to allow the municipality to provide asylums for the insane and for the blind. Laws of Michigan, 1855, p. 221.

⁴ All the homes under denominational auspices belong to the Roman Catholic Church, except that of the Church Charity Foundation of Long Island, which is in the hands of the Protestant Episcopal Church, and the home at Yonkers, New York, which is under

Most are in the hands of special boards of trustees, managers, or directors, numbering from five or seven to several times as many. The state is seldom directly concerned in their management, though they are as a general thing subject to visitation and inspection by State departments of public welfare.

For their support the homes have to depend for the most part upon voluntary contributions, which amount on the average annually to a few thousand dollars. In some cases they have aid from community chests or like sources. Occasionally they are the beneficiaries of legacies; several have endowments of some size.¹ In the case of homes under the control of special societies the fees and dues of members are often of material assistance. Admission fees or occasional payments (possibly including pensions) are likewise of aid at times. Donations of various kinds may also be received. For the benefit of a small number of homes there are grants of public money, these being more often from the county or city than from the State, and usually for the cost of public charges; at times as many as one-third of the inmates are thus provided for.²

The value of all the property of the homes is probably close to one and one-half million dollars, ranging for each from a few thousand to several hundred thousand. The total annual expenses for their upkeep amount to several hundred thousand dollars, or perhaps near \$400 for each inmate. The homes are generally for the aged and infirm, especially for such as are homeless and destitute.³ Most are exclusively

the New York Guild for the Jewish Blind. St. Joseph's Asylum for Blind Girls is a branch of the Mission of the Immaculate Virgin for the Protection of Homeless and Destitute Children, and St. Joseph's Home for the Blind is directed by the Sisters of St. Joseph of Peace. The home in St. Louis is under the auspices of the Young Women's Christian Association, and one home in Nashville under the auspices of the King's Daughters. The homes in Washington and Kansas City, and two in Massachusetts (Rogers and Woolson) are conducted as part of the work of associations for the blind. The Pennsylvania Retreat for Blind Mutes and Aged and Infirm Blind Persons (1882) is a department of the Pennsylvania Working Home for Blind Men. In a few instances there are auxiliary committees of women. In certain of the organizations membership is open on the payment of the prescribed fees, which vary from \$5 to \$100 for members, life members, patrons, etc.

¹ One home in New York (Society for Relief of Destitute Blind) has an endowment of nearly a half million dollars. The Chapin Home in Philadelphia has perhaps half as much. Homes which have received smaller sums are those in Philadelphia (Industrial Home for Blind Women), Washington, Cincinnati, Worcester, and Des Moines. In a few instances a building has also been given, and in one or two land. Occasionally as much as several thousand dollars has been netted from a single fair or other entertainment. In some instances mite boxes have won a generous response from the public.

² On assistance from the State, see Laws of Pennsylvania, 1869, p. 654; 1872, p. 384; 1874, p. 52; 1885, p. 283; Laws of Tennessee, 1903, ch. 231. Cities which have assisted are New York City, Washington, and Kansas City.

³ Only a few have specific age limitations. The Chapin Home takes none under 65, and the Industrial Home for Blind Women of Philadelphia prefers none over 50. Some homes decline to receive confirmed invalids. A frequent formal qualification is good physical and mental condition. Several homes are ostensibly for working blind persons. The Chapin Home is for "respectable blind persons who by reason of age or infirmity

for women, a few allowing a limited number of men. Admission is generally restricted to a particular territory, though in a few instances persons may be received from outside this if there are sufficient accommodations. In the case of homes directly controlled by a religious body, preference is usually given to those embracing its faith. In many of the homes an admission fee is expected, most often of \$300 (perhaps slightly more for those of advanced age). As a rule it is required that all property of the inmates be assigned to the home, or that a certain amount therefrom be regularly yielded to it. Inmates in general pay as far as they are able, though on the whole proceeds from this source amount to but little.

The number of the blind in the special homes in the United States is somewhat in excess of 550.¹ Of these probably nine-tenths are women. The number of inmates in particular homes varies from ten or less to nearly one hundred, the average being about twenty-five or thirty.²

Though in most homes no work may be required in return for the support of the inmates, yet into the greater number there have been introduced several suitable industries, the purpose of which is to provide occupation, as well as to afford a modicum of financial aid to those so engaged.³ (As a rule all able-bodied persons are required to do what work they can.) In homes in which there may be some young blind persons, there is usually a certain amount of instruction also given.⁴

are unable to earn their own livelihood and who otherwise would be without a home." The St. Joseph's Home of New York is "for the benefit of blind women who have no friends to care for them or means properly to support them." Several of the homes have one or more deaf-blind inmates. In one or two of the homes under the Catholic Church a small portion of the inmates are children. In Pennsylvania indigent blind persons may be sent to homes instead of to almshouses.

¹ In some of the industrial homes to be considered later, there are a certain proportion of the inmates who do little or no real work, and who in fact are in a "home for the blind." Such are mainly the aged and the infirm. In Illinois a separate home for this class has been asked for. Report of Illinois Board of Charities, 1908, p. 226.

² Several of the homes are crowded, and some have long waiting lists.

³ In practically all the homes industrial work is carried on to a considerable extent, especially in those at Cincinnati, Philadelphia (Industrial Home for Blind Women), Washington, Worcester, New York City (Staten Island and Manhattan), Jersey City, St. Louis, Nashville, and Des Moines. In the homes in Yonkers and Kansas City there are separate industrial establishments. The main industries afforded are sewing, weaving, and knitting, with some chair caning and basketry. Sales are sometimes considerable, now and then comparing not unfavorably with those of the regular industrial establishments.

⁴ The home in Boston and one in Brooklyn are largely for temporary accommodation, or for boarding purposes. The Rogers and Woolston homes in Massachusetts are largely of the nature of social centers.

NOTE TO CHAPTER XL.—On homes for the adult blind, see J. J. Dow, "Homes for Blind Women," 1912; J. W. Welch, "Abilities and Achievements of Blind," 1905, pp. 203, 359, 425; United States Census Reports, "Benevolent Institutions," 1915; Report of Massachusetts Board of Charity, 1865, p. lii.; Report of Pennsylvania Board of Public Charities, 1871, pp. xx., liii.; Report of Trustees of Kansas Charitable Institutions, 1888, p. 162; Report of Board of Charities of District of Columbia, 1916, p. 228; 1917, p. 252; 1918, p. 199; 1920, p. 200; Report of New York City Commissioner of Public Charities and

Corrections, 1893, p. 231; Proceedings of Minnesota Conference of Charities and Correction, 1899, p. 58; Indiana Bulletin of Charities and Correction, June, 1897, p. 34; Ohio Bulletin of Charities and Correction, vii., 1902, 2, June, p. 32; xvii., 1911, 2, July, p. 72; Report of Royal Commission on Blind, Deaf and Dumb, etc., 1889, p. 419; Report of Conference on Matters Relating to Blind (England), 1902, p. 166; Proceedings of American Association of Instructors of Blind, 1894, p. 60; Proceedings of American Association of Workers for Blind, 1907, pp. 108, 114; 1911, p. 53; 1931, p. 68; and *passim*; Report of Ohio School, 1881, p. 14; 1893, p. 137 (5th reunion of former pupils, 1890); 1895, pp. 104, 113 (6th reunion of former pupils); 1900, p. 95 (7th reunion of former pupils); 1902, p. 8; Pennsylvania Institution, 1881, p. 16; Minnesota School, 1912, p. 45; Montana School, 1908, p. 19; North Carolina School, 1916, p. 16; *Catholic World*, i., 1865, p. 326; lxvii., 1898, p. 507; *Outlook* (England), lii., 1923, p. 180; *Monthly Packet*, xcii., 1896, p. 250; *Lamp*, v., 1865, p. 151; *Month*, lxxxix., 1897, p. 255; *Household Words*, v., 1852, p. 195; *Garden and Home Builder*, xlvii., 1928, p. 137; *Charities Review*, xii., 1901, p. 583; *Orphans' Messenger and Advocate of Blind* (St. Joseph's Home), Jan., 1900; Jan., 1901; *Ohio Harp* (Ohio School), vi., 1909, p. 29; *Voices from Darkland*, March, June, 1916; *Mentor*, iv., 1894, p. 332; *Problem*, iv., 1903, p. 13.

On begging by the blind, see Jonas Hanway, "Defects of Police . . . and More Probable Means of Relieving Blind," 1775, p. 257; C. J. Ribton-Turner, "History of Vagrants and Vagrancy," 1887, p. 233; Henry Mayhew, "London Labor and London Poor," 1862; Florina Lasker, "Care and Treatment of Jewish Blind in City of New York," 1918, pp. 62, 92; J. D. Cutsworth, "The Blind in School and Society," 1933, p. 136; League of Nations Health Organization, Report on Welfare of Blind, 1929, p. 72; Report of Chicago Department of Public Welfare, 1925, p. 10; Social Work Year Book, 1929, p. 37; Proceedings of Minnesota Conference of Charities and Correction, 1899, p. 58; Proceedings of Pennsylvania Conference of Charities and Correction, 1911, pp. 130, 136; Proceedings of American Association of Workers for Blind, 1925, p. 201; 1927, pp. 81, 83; Report of Pennsylvania Commission for Blind, 1925, p. 49; Report of Delaware Commission for Blind, 1915, p. 8; Report of Michigan School, 1858, p. 25; Maryland School, 1903, p. 71; Pennsylvania Institution, 1909, p. 25; *Metropolitan Magazine*, xii., 1900, p. 651; *Good Words*, xiii., 1872, pp. 205, 284; *Survey*, xlii., 1919, p. 88; lviii., 1927, p. 410.

CHAPTER XLI

HOMES FOR BLIND: HOMES FOR CHILDREN

NEED OF SPECIAL TREATMENT FOR VERY YOUNG BLIND

The question of special homes for blind children is in some degree related to the educational interests of the blind, and its treatment here may seem to be a temporary departure from the concerns of the adult blind. Yet, as such provision is largely of material character, and as it is to a considerable extent similar to the matter of homes for the adult blind, it may perhaps be properly considered in this place.

The care of very young blind children constitutes no slight problem. Such children are as a class peculiarly powerless, helpless, and ineffectual; they are in need of guidance and direction and general assistance in rare degree. They may be largely undeveloped, remaining in an inert, passive state, physically and mentally.¹ In addition, in some cases the blind child is treated overindulgently in its home and is called upon or permitted to do little for itself. In a larger number of cases, however, the blind child particularly in need of attention is the one who is without a home of its own, or one whose home environment is not of proper order, or one who cannot at home receive the notice and consideration which are necessary. Not infrequently blind children are discovered living in unwholesome or untoward surroundings, especially where parents or relatives or other persons in charge of them are poor or ignorant or of low moral standards; at times they may be subject to positive neglect, or even to ill-treatment or abuse. Very often young blind children are in need of medical attention.

On general principles the blind child in its early years should remain in its own home if this is at all possible. Its removal therefrom before school age should be avoided so far as is consistent with its immediate welfare. The natural and the most desirable place for the child is its home. Separation from family is increasingly regarded as an unwise policy. The family and the home are institutions of too great value in

¹ "Too many blind children suffer from lowered morale and poor physical stamina which often result from mental or physical inactivity. If a blind child is to receive normal mental development, he must have a more stimulated, active babyhood." White House Conference on Child Health and Protection, "The Handicapped Child," 1933, p. 48. "The blind child without training is usually anæmic, undeveloped, poorly nourished, with flabby muscles, and with nervous habit movements." W. C. Posey, "Hygiene of Eye," 1918, p. 289 (O. H. Burritt). See Proceedings of American Association of Instructors of Blind, 1888, p. 9; Report of New York Institute, 1898, p. 12. See also *ante*, p. 385.

human society to be broken up or to be interfered with unless for imperative reasons. No exception should be made for the child that is blind if it can be helped.

It is only when the homes of blind children are found to be distinctly unfit or positively hurtful that there should be consideration of their removal. If children are taken from their homes, it is better, according to the accepted standards of child welfare work, to have them placed out or boarded out among families qualified to care for them rather than to have them congregated in an institution, with its more or less abnormal life.¹ Such procedure, however, with a blind child must be of rather limited extent because of the extra trouble and attention occasioned by it.

Yet when there exists no real home, or when home conditions are markedly unfavorable, or when a suitable foster home is not available, or when there is pronounced need of medical or hospital treatment, there should be reserved to the state the right and the power to remove the child and to place it wherever seems best for its own good. This may include special homes or institutions, even though in general they are to be regarded as a last resort. If there is ever justification for them, there is added justification in the case of children who are blind.

If the blind child is to live in its own home, or in some other private home during its pre-school years, more or less frequent visits thereto are to be made for the purpose of giving helpful advice for its care and upbringing. This may be done by special visiting teachers (perhaps from a school for the blind) or through some other agency. The child's environment and treatment are to be of wholesome, constructive character, and as nearly normal as possible. Apart from any necessary medical attention, the child is to be accorded the training of which it stands in such need. This is to embrace the recognition and attempted correction of early faulty habits of conduct, development of the sense of touch and motor coördination, and teaching of care of oneself, of independence of movement and action, and of participation in family life and in the life round about.²

Special attention to blind children in their homes on any considerable scale may be said to have hardly begun in the United States as yet. Except for a certain concern in the matter on the part of some of the schools, mainly in the way of advice and general friendly interest, action has mostly been taken by some private organization for the blind, but to a limited extent, or for a few cases. With the creation of

¹ See Chapter XXV.

² Especially to be learned are how to dress, to feed oneself, and to walk alone (including climbing of stairs), together with the handling of objects.

special homes or institutions, more direct aid, both from private and from public sources, may be expected.¹

PLAN OF HOMES FOR BLIND CHILDREN

In special homes or institutions for blind children, there should be afforded full facilities for medical attention and treatment, both as to the eye and as to general physical condition, besides general care and oversight. Also to be provided are means for education, beginning with the earliest years for which any sort of education is possible or appropriate.²

Homes for blind children have in fact a much larger function than that of mere child-caring establishments. Properly conceived, they combine three features: (1) a nursery for the care and development of blind babies; (2) a hospital for the treatment of various complaints, especially of those affecting the eye, which in some cases may result in complete or partial restoration of sight; and (3) a kindergarten department, in which a certain amount of instruction may be afforded to the older children.

PRESENT EXTENT AND ORGANIZATION OF HOMES

The first home for blind children to be established was at Hartford, Connecticut, in 1893, as a department of the Connecticut Institute for the Blind, later being removed to Farmington. It was followed by the Boston Nursery for Blind Babies in 1901; the Dyker Heights Home for Blind Children in Brooklyn, New York, in 1904; the Brooklyn Home for Blind, Crippled, and Defective Children in 1907; the Arthur Sunshine Home and Kindergarten for the Blind at Summit, New Jersey, in 1910; and a home in New York City under the New York Guild for the Jewish Blind in 1918.³

There are thus six special homes for blind children in the United States, all in the East.⁴ They are found in the States of Massachusetts,

¹ To some extent the work of kindergarten departments of the schools represents pre-school care. Similar provision is attempted by a few other organizations for the blind. In private institutions for the education of blind children some such care is also afforded. A not unimportant work of a temporary character is also done by eye and ear infirmaries of some of the larger cities. In a few instances blind children are received by orphanages and other child-caring institutions.

² It is from this phase of the situation that there arises the question of admitting blind children into the regular schools for them at very early, or during "pre-school," years. These schools must, however, retain their elemental character as schools, established and maintained for that purpose, whatever their position on this particular problem.

³ One or two additional homes have been planned. At Monroe, Michigan, there was created in 1913 the Monroe Home and Hospital for Blind Babies, which continued for a few years. For table as to homes, see Appendix C.

⁴ Most of the homes have been founded as the result of interest on the part of certain philanthropic women.

Connecticut, New York, and New Jersey, there being three in New York. The homes are all private affairs, their immediate direction being vested in boards of trustees. One of the homes in New York is under the auspices of the Roman Catholic Church, and one is part of the work of a Jewish organization for the blind.¹ The remaining home in New York and the home in New Jersey are branches of the International Sunshine Society. The home in Connecticut is a part of the school for the blind. The home in Massachusetts is in the hands of a society organized for the purpose. In most cases the homes are inspected by the State board of charities or a similar body, in Connecticut the inspection being made by the special board of education for the blind. The homes in general are regarded as in part educational institutions, with appropriate educational supervision. Medical facilities are usually at hand in all.

The homes are to some extent supported by private contributions, which in certain cases amount to several thousand dollars a year.² But though nominally private institutions, they are aided in greater or less measure by public subsidies. This is particularly the case with those having an educational character, in some of which much the greater number of inmates are public charges. The annual cost of maintenance of all the homes is in excess of one hundred thousand dollars, or not much below \$450 for each child. The value of all the plants is over three hundred thousand dollars.

The number of children in a single home varies from half a score in the smallest to over half a hundred in the largest.³ In all there are perhaps somewhere near one hundred.⁴ The age limit to which children are permitted to remain is usually five, six, or eight years, or even higher in some cases, especially where an educational recognition is given, or where the institution is rather for children in general. It may depend upon the age at which entrance to the State school is possible. The minimum age limit for admission is usually two years. There is sometimes a formal requirement of pay, even in part, from those able, though in practice such is seldom charged. A portion of the inmates in most homes are from other States.

¹ The Brooklyn Home for Blind, Crippled, and Defective Children (including other classes as well) is under a Catholic sisterhood (Daughters of Wisdom).

² Homes which have especially benefited from private donations (including endowment funds) are those in Massachusetts, New York (Dyker Heights), and New Jersey. That in Massachusetts also receives aid in the form of membership dues. Assistance to homes is sometimes afforded by means of entertainments. In certain instances not a little has come from mite box collections.

³ Some of the homes make particular efforts to discover blind babies, and to see that proper care is given them at home.

⁴ Some children have only seriously defective sight. Some are post-operative or pre-operative cases.

PUBLIC AID FOR HOMES

After the establishment of homes for young blind children, it was not long till the State was called upon to take notice of them and to lend them aid.¹ Such action was considered all the more appropriate in view of the work of an educational character which to some extent had been undertaken. Public assistance, first rendered by the State of New York in 1908, has been granted in all in about one-third of the States. In some provision is made for the sending of children to homes in other States. In several States laws authorizing such aid have been repealed.² States at present with the laws are Arizona,³ Arkansas,⁴ Delaware,⁵ Kansas,⁶ Maine,⁷ New Jersey,⁸ New York,⁹ Pennsylvania,¹⁰ Rhode Island,¹¹ South Dakota,¹² and Tennessee.¹³ In certain instances the laws are hardly more than nominal.

The usual provision is that some home, either in or out of the State, may be contracted with for the care, maintenance, and instruction of blind children who are of a certain age, perhaps the age of entrance into a regular school, or of blind infants and other blind children who are without suitable custody, or not otherwise provided for, the age limit in the latter case being thus left indefinite. Where an age is specified, it is generally six, seven, or eight.¹⁴ Often reference is to children too young for the regular school for the blind.¹⁵ An increasing tendency is to admit children for whatever ages seems best. More and more the State school is being specified as qualified to receive children of pre-school age.¹⁶ For older children due education is generally to be afforded.

¹ On public aid to homes, see *Outlook for Blind*, vi., 1912, p. 51; Message of Governor of South Dakota, 1917, p. 10.

² See Laws of Michigan, 1913, ch. 258; 1917, ch. 188; 1919, ch. 219; 1921, ch. 307; 1927, ch. 319; Laws of Minnesota, 1913, ch. 284; Gen. Stat., 1929, § 4451; Laws of North Dakota, 1913, ch. 67; 1927, ch. 102.

³ Laws, 1912, chs. 9, 36.

⁴ Laws, 1921, ch. 525; Dig. Stat., 1929, §§ 9481a-9481c.

⁵ Laws, 1925, ch. 175.

⁶ Laws, 1923, ch. 183.

⁷ Laws, 1913, ch. 46.

⁸ Laws, 1916, ch. 134.

⁹ Laws, 1908, ch. 65; 1912, chs. 60, 223; 1919, ch. 297; 1920, ch. 110; 1923, ch. 163; Cons. Laws, 1930, p. 708.

¹⁰ Laws, 1911, p. 309; 1913, p. 158; 1915, p. 481; 1917, p. 206; Purdon's Dig., Supp., 1923, p. 8026.

¹¹ Laws, 1913, ch. 945; Gen. Laws, 1923, § 1659.

¹² Laws, 1917, ch. 150.

¹³ Laws, 1915, ch. 82; Code, 1931, §§ 4547-4549.

¹⁴ In Arkansas, Michigan, and Minnesota the limit is 6 years; in Arizona, 6, or in some cases 12; in Tennessee, 12, or in some cases 16; and in Pennsylvania, 8, or in some cases 12, or even more. In Delaware, Kansas, and Maine, reference is to children under school age, or too young for the State school. In New York the age is unfixed.

¹⁵ In a few cases backward children are expressly mentioned.

¹⁶ As in California, Massachusetts, and Michigan.

In a few cases some State institution is empowered to care for young blind children before school age.¹ Sometimes, especially in States without local schools, the general provisions applying to the education of the blind are simply extended to include the very young.

In certain instances aid is formally offered only to children whose parents are unable to furnish proper support; and in most instances the consent of the parents is necessary. Where a specific sum is allowed for the purpose, this is usually from a little under \$400 to over \$500 a year.² For the most part the duty of looking after young blind children is entrusted to the State department of education. In South Dakota it is in charge of the State board of control. In Arkansas and Kansas, the matter is vested with the State school. In a few States special State agencies for the blind are concerned with pre-school blind children.³

¹ In Michigan this is the State school for dependent and neglected children.

² There is sometimes a limit to be expended in one year. The amount has generally been advanced with time.

³ In New York City the department of public welfare has similar powers.

NOTE TO CHAPTER XLVI.—On homes for blind children, see White House Conference on Child Health and Protection, "The Handicapped and Gifted," 1931, p. 253; "The Handicapped Child," 1933, p. 54; "The Little Book" (Milwaukee), 1908; Florina Lasker, "Care and Treatment of Jewish Blind in City of New York," 1918, p. 78; M. de la Sizeranne, "Suggestions for Home Training of Blind Children," 1905; A. K. Halfpenny, "Hints to Mothers of Blind Child," 1916; Arnold Gesell, "Pre-School Child," 1923, p. 105; "To Parents of Blind Children"; "To Parents of Blind and Seeing Children," 1893; L. E. Palmer, "Hints and Suggestions to Parents of Blind Children," 1930; O. H. Burritt, "New Opportunities for Blind Children before Entering School" (1st International Congress of Mothers), 1908; H. L. Olmstead, "Work for Blind Babies of Connecticut" (Council of King's Daughters, Hartford), 1909; Children's Bureau Publications, "Standards of Child Welfare," 1919, p. 91; American Medical Association, Conservation of Vision Pamphlets, 1913, xviii. ("Preparation for Blindness"); xix. ("What to Do for Blind Child"); Proceedings of International Convention of Mothers, 1898, x., 1905, p. 122; Report of New Jersey Department of Charities and Corrections, 1913, p. 152; Report of Special Committee of New York State Board of Charities to Investigate International Sunshine Society, 1914, p. 16; History of International Sunshine Society Work in New Jersey, 1911; Report of Department for Blind of International Sunshine Society, 1914, p. 113; 1915, p. 74; and *passim*; Proceedings of World Conference on Work for Blind, 1931, p. 25; Proceedings of American Association of Instructors of Blind, 1920, p. 69; Proceedings of American Association of Workers for Blind, 1907, p. 108; Report of Connecticut Board of Education of Blind, 1904, p. 16; Report of Pennsylvania Institution, 1913, p. 29; Western Pennsylvania School, 1914, p. 22; New York State School, 1915, p. 21; Perkins Institution, Supplement, 1874; *Homiletic Review*, xciv., 1927, p. 214; *The Child*, x., 1920, p. 537; *New England Magazine*, xxxii. (n. s.), 1905, p. 625; *Connecticut Magazine*, v., 1899, p. 171; *Modern World*, x., 1908, p. 511; *Ladies Home Journal*, April, 1909, p. 12; March, 1911, p. 23; *Van Lewen-Brown Magazine* (Detroit), May, 1916; *Journal of Medical Society of New Jersey*, xlii., 1916, p. 398; *Literary Digest*, July 10, 1915, p. 79; *Pedagogical Seminary*, xxix., 1922, p. 232; *Maternity and Child Welfare*, ii., 1918, p. 343; v., 1921, p. 322; *Pediatrics*, vii., 1899, p. 533; *Journal of State Medicine*, xxxix., 1931, p. 98; *New York State Journal of Medicine*, xvi., 1916, p. 231; *International Record of Charities and Correction*, ii., 1887, p. 148; *Charities and Commons*, xiv., 1905, p. 653; *Outlook for Blind*, i., 1907, p. 44; ii., 1908, p. 30; v., 1911, p. 63; vi., 1912, p. 5; viii., 1914, p. 41; x., 1916, pp. 5, 74; xxviii., 1933, p. 52; *Mentor*, i., 1891, p. 23; ii., 1892, pp. 4, 21, 45; Ohio Bulletin of Charities and Correction, xvi., 1910, 2, May, p. 62. See also reports of schools.

CHAPTER XLII

INDUSTRIAL ESTABLISHMENTS FOR BLIND: THEORETICAL ASPECTS

DISCONTENT WITH INDUSTRIAL CONDITION OF BLIND

In much of our preceding discussion respecting the economic condition of the blind it has apparently been assumed that the mass of them were not to be regarded as potential wage-earners, and that the treatment to be extended to them was to be in accordance with this conception. But from time to time certain questions have been asked regarding the industrial possibilities of the blind. Must it be conceded that the blind cannot in some part be made to maintain themselves by honorable employment? Are there not a number who may be enabled in some measure at least to assist in their support? Is it not feasible to provide occupation at any rate as a set-off as far as possible to their idleness, so that they may not be denied the priceless boon of mankind—"the blessing of toil"? Concretely, may not some kind of industrial establishment be afforded, or some industrial arrangement effected, whereby the blind may be given an opportunity under suitable direction to engage in employment and to become to some extent wage-earners? May not industrial provision of some kind or form be made for them?

We have already dwelt at length upon the industrial condition of the adult blind, and have noted what were the proportions found to be self-supporting. It is from the state of the great number of these, especially of the most unfortunate, that the cry arises for some sort of industrial provision. Concern is directed to the plight both of those who have attended the special schools and have obtained a literary education, but who have found their economic position in the world not greatly improved thereby, and of those who have become blind in adult life and have often been compelled to abandon the occupations to which with the possession of sight they had been accustomed.

Such is the question now before us. It is one of very great moment, and next to that of the prevention of blindness itself is the most pressing one in the work for the blind today. In any consideration of the matter, however, it would be wrong to think that the problem of industrial employment for the blind is a new one, or that it is but a phase of

modern concern in them. As a matter of fact, from the very beginning of organized work for the blind in the creation of schools, attention has been directed to the subject. At the same time it is hardly less true that the plan is now receiving a study never before accorded it. The matter of the industrial employment of the blind we shall duly examine—first examining the theoretical aspects of special establishments, next the practical application of the principle in those hitherto created, and then the possibilities of employment outside of special establishments, or in the general occupations of the seeing.

INDUSTRIAL TRAINING IN SCHOOLS AND ITS LATER EFFECTS

Most of the schools for the blind, as we have seen, do afford a certain amount of industrial training. But this industrial training has not been found to have altogether satisfactory results in the after lives of the pupils. Complaint has been voiced in this regard upon two grounds. First, it has been thought that the training is not adequately based upon the subsequent needs of the blind. Second, there has seemed too often to be discovered a break in the relations of the schools to their former pupils, who pass from them out into a new world where they are left to stand or fall as they may. With many persons there was an expectation in the establishment of the schools, as we have already had occasion to observe in the consideration of their founding, that the blind in general would thereby be rendered capable of earning their own support—a view that even at the present is shared in some quarters. It would have been much better if such a hope had never been entertained, or if it had existed in a greatly modified form. A limited acquaintance of a practical nature with the blind as a whole and their capabilities has usually been sufficient to demonstrate the weakness of this conception.

At the very beginning of the instruction of the blind in the United States the industrial problem came to the front. The schools had hardly taken up their tasks when they found themselves face to face with the question of the after employment of their pupils; and it was one of their great purposes to meet it. Indeed, it may be doubted if the matter were regarded as hardly less acute in the early schools than in those of today. Soon after the inception of one of the former we are told in words that sound much as of the present: "What the blind need is encouragement, and not sympathy; wages, and not alms."¹

It was in the first years the prevailing belief that by a well-adapted course of training the pupils in the schools could to a very great extent

¹ Report of Tennessee School, 1861, p. 6. There was to be "a substitution of ability to 'do' for a sense of dependency." *American Journal of Insanity*, xi., 1855, p. 386.

be made self-supporting. Thus in an address to the public at the time of the opening of the school in Massachusetts it was stated that "blind persons can become as well qualified as seeing persons for many employments which are generally thought beyond their powers."¹ In response to an inquiry as to the advisability of the establishment of a school in Ohio, it was asserted that there would be "sad disappointment if three-fourths of the pupils cannot support themselves."² In an official account in New York a few years after the opening of a school in that State it was declared: "Many if not all of them [the blind] will thus be enabled to earn an honest living."³ In the first report of the Iowa School the accepted view is presented in even more sanguine terms:

It is confidently believed that the blind, with proper instruction, will be able to maintain themselves free of charge from their friends or the State. There will be as few exceptions among this class, according to their numbers, as among those who have sight.⁴

In an early report of the Ohio School a similar anticipation is expressed, but in more guarded language:

The hope and expectation is that our pupils when they leave here will be able to support themselves . . . though we admit that there is not sufficient experience here or elsewhere in this country to decide whether it will be fully realized.⁵

As further evidence of the confidence felt in the results of an industrial nature of the schools, we find that in the exhibitions of pupils given in many States to awaken an interest in the movement, prominence was very often accorded to this aspect of the work, with a more or less extensive display of articles already produced.⁶

The schools, however, as the actual results began to be borne in

¹ Address of Trustees of New England Institution for Education of Blind, 1833, p. 11.

² Report of Trustees Appointed to Collect Information Relative to Education of Blind, 1836.

³ New York Assembly Documents, 1840, no. 172, p. 5 (Report of Commissioner of Schools concerning Institutions for Deaf and Dumb and for Instruction of Blind). "It is gratifying to know that a large proportion of the graduates of this institution are capable of earning, and many of them do earn, their own support in after life." Message of Governor of New York, 1861, p. 28.

⁴ Report, 1854, p. 4.

⁵ Report, 1843, p. 15. On early hopes regarding the industrial prospects of the schools, see also *American Annals of Education*, iii., 1833, p. 579; vi., 1836, p. 254; Pennsylvania Institution, Address to Public, 1834; Address to Citizens of State of Delaware, 1834, p. 5; Address to Inhabitants of New York, 1832; Account of New York Institution, 1833, p. 15; By-laws of Virginia School, 1845, p. 4; Report of Ohio School, 1845, p. 6; Tennessee School, 1857, p. 12; Minnesota School, 1892, p. 89.

⁶ The early schools drew forth nearly as much astonishment and admiration for the industrial accomplishments of their pupils as for the intellectual. The chief products exhibited were baskets, mats, mattresses, woven work, and the like.

upon them, were not long in coming to a full appreciation of the situation, and to the realization that the tasks which they had set before themselves were far beyond their powers. At one of the early conventions of instructors the case was thus stated:

The great idea in establishing institutions for the education of the blind was to promote their real welfare, not only as regards their intellectual and social improvement, but in fitting them for self-support. The action of the legislatures has been greatly influenced by this expectation, and they continue to be liberally supported for the same reason. The experience of this country and of Europe has not realized this hope.¹

The explanation was simple:

They [the blind] have been taught habits of industry at school, but because they cannot earn enough by their labor to supply both board and clothing, they must either beg or go to the almshouse.²

Not only did the schools recognize this condition, but many of them felt a keen responsibility in the matter. They questioned themselves as to what should yet be done; and the most frequent query was whether they should not offer some sort of industrial provision as a continuation of their duty to the blind who had once been their pupils. By some this was formally proposed as a solution of the problem, and by a few it was actually attempted, as we shall later see.

The schools had peculiar opportunities of discovering how former pupils were faring after they had left the friendly roofs that had sheltered them and were battling with the world. There was frequent occasion to note a tendency in them to look back to the schools for help and guidance when the struggle was going hard. Brave as might be the efforts of the blind man, they were often insufficient to meet the conditions which were before him. In the words of an Indiana report:

He has failed just where almost any other person with even inferior education and skill in his trade would have been successful, and he must fall back disconsolate upon his friends, or upon his *alma mater*.³

The situation is thus described in the case of the New York Institute:

In the earlier days of this institution, the only object sought was to educate the blind, and fit them for usefulness and self-support in the isolated positions which they occupy. . . . When the term of their instruction expired they returned to their friends and attempted to make their way in the world as the seeing do, by means of the trades they had learned. But the multiplied difficulties under which they labored from the want of means, the difficulty in procuring materials and making sales, soon demonstrated

¹ Proceedings of American Association of Instructors of Blind, 1874, p. 32.

² Report of Maryland School, 1873, p. 11.

³ Report, 1850, p. 38.

that against these obstacles it was impossible, without additional aid, for them to compete successfully with the seeing, and that as yet philanthropy had done but half its work. Our graduates began to return to us, representing the embarrassment of their condition abroad, and soliciting employment at our hands.¹

The condition of the blind is further indicated in connection with this institution.

The blind had been taught to hope that we were putting into their hands the means of independence in the trades we were teaching them. We had encouraged them to go forth and make the experiment of self-support. They had made the attempt, and although with many instances of success, the far greater number found the object unattainable. The bright hope that had been cherished for years, which had cheered the darkness of the present and illumined the pathway of the future, was extinguished. The world was made for the seeing—they began to fear that there was no place in it for the blind. Thus defeated and disappointed, our graduated pupils came back to us, and constant were the applications for relief.²

In these circumstances it is not to be wondered at that in more than one instance an ear was lent to the project that the school undertake the industrial support of its former pupils. In the words of a report of the Pennsylvania Institution:

To refuse this and dismiss them to make their way in the world, unfriended and unprotected, would be, in many such cases, the means of obliterating all they have learned, and consigning them to hopeless dependence, a burden to the public and to themselves; and to that extent to become living evidences of failure in the institution from which they were inconsiderately discharged. It would render fruitless the whole cost of their education. . . . The proper preventive is the establishment of a Retreat where their bread can be earned, their morals protected, and a just estimate put upon their talents.³

In a report of the Missouri School it was declared that there was no escape from a decision—

Whether the policy shall compel all graduates to pass out into the conduct of life, however they may be qualified; or whether [the school] shall discriminately employ them in workshops.⁴

It was felt that, by the condition of the pupils who had gone out from their doors, action was forced upon the schools, and that no other course was open to them. Indeed, so widespread had this view been

¹ Report, 1849, p. 7.

² Report, 1850, p. 18. See also *ibid.*, 1841, p. 9.

³ Report of Special Committee Appointed to Consider . . . Retreat for Blind, 1851, p. 5. See also Address to Public of Home for Industrious Blind, 1861; Report of Tennessee School, 1869, p. 6; Georgia School, 1871, p. 8.

⁴ Report, 1860.

accepted on the part of the schools that even as late as 1853 the American Association of Instructors of the Blind at its first convention adopted the following resolution:

Resolved, That in the opinion of this convention every institution should offer employment to all its graduates of good moral character.¹

The schools were to continue the work because there was no other agency to do it.²

In the course of time, however, and especially after the results of the experiments in this direction had become known, the impracticability of the scheme was generally seen; and the schools one after the other, with but an occasional later exception, finding that they were not the proper places for the task, gave up the thought of establishing industrial departments for adults in connection with their work.³ So completely had the tide now turned that only a score of years after the resolution just mentioned had been adopted, the opinion was expressed that if such a resolution had been then offered it would not "have received two votes in the convention of 1874."⁴

Though the schools had abandoned the plan of furnishing through themselves industrial provision for their former pupils, their interest in the well-being of those whom they had once instructed was in no wise diminished. The belief was still general among them that industrial establishments of some kind should be made available: only now their judgment had veered to the necessity of the creation and maintenance of such as independent undertakings, free from direct union with them. The reasoning as to the original problem remained the same; and the fate of their former pupils in the world still bore heavily upon them. The desire for a shop and the relation which it should sustain to the schools in the benefits offered by them are thus expressed in an early report of the Ohio School:

This additional plan of benevolence would seem to finish the work so nobly begun and continued by the state, and at once cheer the hearts of those who are sometimes saddened by the doubts and difficulties of their future prospects.⁵

Thus much for the early recognition of the economic condition of the blind who had attended the special schools, and for their efforts to deal

¹ Proceedings, p. 5; Report of New York Institute, 1854, p. 51.

² For a time some schools had three functions: a school for the young; an industrial home for those engaged in an occupation; and a retreat for the aged. In a few instances the law provided for the admission of a certain number of adults.

³ On undesirable results of association with adults, see Proceedings of American Association of Instructors of Blind, 1922, p. 64.

⁴ Report of Maryland School, 1875, p. 18.

⁵ Report, 1846, p. 9.

with the situation. Attention may now be directed to the present-day aspects of the matter. It is found that the practical achievements of the schools from the beginning down to this time have consisted for the most part in the providing of a literary education for their pupils, with the furnishing of an industrial equipment which may prove one insufficient to answer in the world outside. There has been complaint on many sides as to this state of affairs, and frequent fingers have been pointed to the condition of those who have had a "schooling."¹ The schools, so far as their aims are concerned, are thus represented by the Commission for the Blind of Massachusetts:

They are distinctly educational, and their dominant conceptions academic; their curriculum is mainly literary, and their method scholastic. . . . The present industrial training is stereotyped. . . . The schools are organized and managed like the public schools, . . . their graduates are left to sink or swim. . . . Hitherto but feeble and unsystematic effort as a rule has been made to keep in touch with them, or to establish bureaus of information or employment. . . . Consequently many of the blind lose heart and hope, and fail for lack of opportunity or of general business capacity to maintain themselves or to contribute much to their own support, even when they have learned a handicraft during their pupilage.²

The State Board of Charities and Corrections of California has this to say regarding the situation in that State, where there is also an industrial home:

The management of the institution for the blind says that they leave the industrial training of the blind for the home, and the home in reality only trains men in the manufacture of brooms. It must therefore be conceded that the industrial education of the blind in this State is very scant.³

In Ohio it is affirmed that "the teaching of the State school has benefited but a few."⁴

The situation of the blind after they leave school is thus further described:

Many of the States have been generous in their provision for the education of the young blind. . . . At the close of the school period of their lives, however, at the most critical juncture, when their whole future is to be determined, in this country intelligent interest seems suddenly to cease. . . . [The blind] have outgrown the school, and we have no place for them in the active world. They have no business training. . . . Many of them

¹ Of former pupils of one school, only 5 per cent are said to be self-supporting. Proceedings of National Conference of Charities and Correction, 1907, p. 489; Proceedings of American Association of Workers for Blind, 1907, p. 88; *Outlook for Blind*, ii., 1908, p. 10. See also *American Journal of Sociology*, vii., 1902, p. 359; Proceedings of National Conference of Charities and Correction, 1888, p. 113.

² Report, 1906, pp. 8, 10.

³ Report, 1908, p. 78.

⁴ *Ohio State Medical Journal*, v., 1909, p. 472.

have no profession, most of them have no trade. Some of them have been ambitious students in music and piano-tuning . . . but unfortunately most of them are poor and without friends. They may be willing and even anxious to work, but to get started and established is an almost impossible task. If the school training has been in music, which is usual if a correct ear and any natural ability are found, there still remains the great difficulty of finding pianos or organs to play; and lacking the opportunity, the costly training given by the State goes for nothing, and a life of unwilling dependence follows.¹

Yet as a matter of fact the blame for the state of affairs found to be existing can only in the slightest degree attach to the schools. The blind man, as we have already in large measure discovered, presents a peculiarly difficult problem in any community, and despite the best and most practicable industrial instruction available, his may prove an unhappy existence.² With continued direction and oversight, his position may be somewhat bettered; but even if this were a task easy of itself, it is hardly one that should be laid upon the schools, and one not to be assumed without serious detriment to their appointed business. For the schools to offer a course of training that would be entirely satisfactory in after years would be a ready solution of the matter; but with blindness the thing that it is, this does not now appear to be within the range of the achievable. The most that can be asked of the schools is that they provide the most practical and suitable trades that can be found, and ones adjusted to the farthest degree possible to the requirements and opportunities of the life to follow. With this their main duty is done: they are absolved from the responsibility for the general industrial condition of their former pupils.

It is, furthermore, to be said that the schools do not, after all, make an entirely poor showing with regard to the economic standing of their former pupils when this is compared with the standing of the adult blind in general. As we have found, the proportion of the blind who are gainfully employed is three times as great for those who have attended school as for those who have not; while the proportion of such who are self-supporting is appreciably greater for the former than for the latter, and the earnings of the one are notably greater than those of the other (though credit is also to be shared by schools not primarily for the blind, with due consideration as well given to other factors).³ We have, in addition, the statements of some of the schools respecting

¹ *Charities and Commons*, xiii., 1905, p. 497.

² "It is only in exceptional cases and under especially favorable circumstances that it [the school] can ensure the blind man a livelihood. . . . It is not surprising that some of the best friends of the blind have seriously questioned whether they must not always remain a helpless and dependent class." Report of Minnesota School, 1892, p. 89.

³ See *ante*, p. 241.

the proportion of their graduates who are self-supporting. In the case of the Ohio School this is given as 77 per cent;¹ of the Maryland School, as 70 per cent;² of the Wisconsin School, as 75 per cent;³ of the North Carolina School, as 85 per cent;⁴ and of the Kansas School, as 80, perhaps 90, per cent.⁵ Of the better-type graduates of Perkins Institution four-fifths make good.⁶ Of pupils graduating from the Pennsylvania Institution from 1888 to 1906 there are 85 per cent reported to be successful in later life; and of those not graduating 29 per cent are reported as self-supporting, and 16 per cent as partially so.⁷ Of former pupils, taken at random, who had finished courses at the New York Institute from 1892 to 1912 there are 56.7 per cent who were regarded as successful, 28.3 per cent as partially so, and 15.0 per cent as unsuccessful.⁸ Of graduates of the New York State School from 1901 to 1908 all but three or four are reported to be earning a competent living.⁹ Of male graduates of the Colorado School 91 per cent are said to be so.¹⁰ An estimate of successful graduates able to support themselves without assistance for the country at large is 50 per cent.¹¹ From advices received directly from certain of the schools, the proportion of graduates who are successful ranges from 60 per cent to

¹ Report, 1895, p. 101 (8th reunion of former pupils).

² *Baltimore American*, May 20, 1903.

³ Report of Wisconsin Board of Control, 1908, p. 268.

⁴ Report, 1906, p. 13; *Outlook for Blind*, iii., 1910, p. 171; Proceedings of American Association of Workers for Blind, 1909, p. 47; Proceedings of National Education Association, 1910, p. 1052; Transactions of Medical Society of State of North Carolina, 1915, p. 292.

⁵ Report, 1896, p. 8. See also Report, 1894, p. 13.

⁶ Report, 1922, p. 16; Report of Massachusetts Commission for Blind, 1925, p. 37.

⁷ Report, 1907, p. 14. Of pupils discharged from this institution from 1902 to 1907 there were 42.5 per cent considered to have "good" prospects of success, 23.3 per cent "fair," and 11.6 per cent "poor," with 22.6 per cent regarded as incapable, most of such being hopelessly feeble-minded or physically ill. Those with the most favorable chances usually had some sight. *Ibid.*, 1912, p. 15. Of graduates, 75 per cent are "favorably accounted for." Proceedings of International Conference on Blind (England), 1908, p. 55.

⁸ Report, 1917, p. 28. Of blind persons in almshouses in the State of New York in 1879 the proportion who had lost sight under twenty years of age was 12.0 per cent; in 1895, 11.6 per cent; and in 1905, 9.1 per cent. The respective percentages who had attended a school for the blind at these different years were 5.5, 6.2, and 5.8. Of living graduates only 2.1 per cent were so situated. W. B. Wait, "Three Special Studies in Sociology of Blind," 1906. See also Report of New York Institute, 1879, p. 25; 1895, p. 25; 1906, p. 33.

⁹ Report, 1908, p. 12. Of those who have learned certain trades 50 per cent are self-supporting, and of those who had learned others from 60 to 70 per cent. *Ibid.*, 1893, p. 9.

¹⁰ Report, 1910, p. 14.

¹¹ Proceedings of National Conference of Charities and Correction, 1906, p. 239. Graduates of the Missouri School "with but a few exceptions are making an independent living." Missouri School, "Story of Blind," 1901. In Indiana of blind persons self-supporting 77.0 per cent had attended a school for the blind, while of those in need of industrial training 43.6 per cent had so attended. Indiana Bulletin of Charities and Correction, Dec., 1914, p. 498. On the success of former pupils, see also Report of Mississippi School, 1887, p. 5; North Carolina School, 1890, p. 21; Maryland School, 1889, p. 13; Ohio School, 1880, p. 13; New York State School, 1886, p. 17; 1903, p. 25; 1904, p. 25; 1906, p. 30; Nebraska School, 1916, p. 24; Bulletin of Missouri Board of Charities and Corrections, 1910, no. 3, p. 58.

100 per cent, and of former pupils, so far as an estimate is ventured, from 20 to 90 per cent.

That the graduates of the schools do better than other blind persons seems to be sufficiently demonstrated—a result that speaks well indeed for the schools.¹ Unfortunately, however, only the smaller part of the pupils graduate; and it is doubtful if the greater number are much better off economically in the world than those of the blind who have never been affected by the schools. The net effect, then, of the schools upon the industrial condition is of limited character. Despite their efforts, which are usually both earnest and intelligent, and generally all that can be expected in the circumstances, the industrial possibilities of the blind are found to be so circumscribed that the impress able to be made upon the situation as a whole is not marked.

INDUSTRIAL CONDITION OF PERSONS BECOMING BLIND IN ADULT LIFE

From attention to the industrial condition of the blind who have attended the schools, we turn to that in respect to the blind who have become so in adult life, and who consequently have not had connection with them. The situation with the latter does not appear to be improved, as we have already found from our previous extensive examinations.²

It is to be stated, however, that a blind man otherwise in good health who loses his sight in adult life is in many respects better off than one always blind. The acquired sense of self-reliance, the industrial habits, the knowledge of conditions in a sighted world, the practical experiences—all stand him in good stead, and give him an advantage of no small value.

¹ See also *ante*, p. 241.

² Persons becoming blind in adult life are described as "that larger class to whom blindness comes as an unlooked for and dreadful affliction, and who are totally unprepared to meet the responsibilities of life in their new condition. The man in middle life—often as strong physically or mentally as he ever was—is left absolutely stranded, when by accident or disease he is deprived of sight. . . . He must learn a new trade, a way of profitably using his energies. . . . In his sudden affliction everything seems hopeless." *Charities and Commons*, xiii., 1905, p. 498. The condition of the adult blind is thus further pictured: "While among the blind there are always a few who, by reason of natural gifts or unusual opportunities, will succeed without outside help, the large majority are merely average men and women. When blindness comes suddenly, the man is at first stunned, then confused, then appalled by the apparent helplessness of his position. He has always depended upon his eyes to guide his every movement; and when he finds that sight is gone, there comes a sense of utter helplessness. His usual movements are imperfectly coördinated, and his attitude and gait take on an exaggerated awkwardness. In the manual laborer, the brain action is not usually rapid. The routine muscular movements under the guidance of the eye have become largely automatic. When one element of the associated functions is taken away, the movement of all becomes hesitant and uncertain. Then rapidly follows loss of self-confidence. The man can no longer do the simple things that he had all his life done, although sight is not required to do them." *Ibid.*, xv., 1906, p. 607. See also Proceedings of New York State Conference of Charities and Correction, 1904, p. 140; Report of Board of Charities of District of Columbia, 1901, p. 274.

OFFER OF WORKSHOP AS MEANS OF BETTERMENT

From this review of the condition of the blind, we are at no loss to understand why inquiry has been made time after time as to whether certain industrial provision might not be made for them which would to some extent at any rate ameliorate their state. Such provision has, in its initial conception, usually taken the form of the setting up of special establishments suited to their needs, in which they are to be put in the way of earning some part of their living.

This proposed action has its theoretical basis in the fact that there exists in the community a body of men who by reason of a physical defect, namely, the loss of sight, are disqualified from engaging in the regular pursuits of men, and who are thus largely rendered incapable of providing for themselves independently. They are to be regarded as "a disabled and infirm fraction of the people," or more specifically, as "sighted men in a dark room."¹ Rather than let them drift into absolute dependence and become a distinct burden, society is to lend an appropriate helping hand.

The creation and maintenance of industrial establishments, it is to be recognized at the outset, involve a not inconsiderable financial outlay. It is not to be expected that they will become self-supporting, though under particularly favorable circumstances they may approximate such a result.² Evidence of this is usually not long in forthcoming after more or less extended experience, even if it is not confessed at the very start. In the case of the industrial home in California at its opening it is declared that "any pretense that it can be made so [*i. e.*, self-supporting] we believe to be visionary or intentionally deceptive."³ Similarly in the first report of the Pennsylvania Working Home it is stated that "it is not for a moment to be supposed that such an establishment can be self-supporting."⁴ To use the testimony of the Massachusetts Commission for the Blind:

¹ "There is no law on the statute books compelling people to move up a little closer on the bench of life, to make room for a blind brother, but there is a divine law written in the hearts of men, constraining them to make a place for him, not only because he is infirm, but because it is his right to share God's greatest gift, the privilege of man to go forth to his work." *Youth's Companion*, Jan. 4, 1906. See also Helen Keller, "Out of Dark," 1913, p. 150; *Outlook*, lxxxii., 1906, p. 993.

² "Congregate" establishments are "from a pecuniary point of view unnecessary, and from a social aspect undesirable. . . . But whether the work is done by the state or by charitable associations, the money should not be appropriated or solicited upon the representation or expectation that scotoic labor can be commercially profitable, or that scotoic labor can earn, or ought to be expected to earn, an independent self-support." *Charities and Commons*, xvii., 1906, pp. 150, 153.

³ Report, 1887, p. 7. See also Report of Illinois Board of Charities, 1888, p. 69.

⁴ Report, 1875, p. 21. This statement was made after the experience of the Pennsylvania Institution with a shop in connection with it.

Satisfactory as has been the experience of Massachusetts in dealing with the question of industrial work for the blind, it should not be forgotten that certain conditions inseparable from that work make it unlikely that the shops, whether small units . . . or larger units . . . can ever be made to pay their own way.¹

On the other hand, it may be argued that this arrangement is not without financial advantage to the state, in that there will be utilized whatever industrial faculties are still possessed by the blind, with the promotion of their industrial efficiency to the fullest degree possible. In addition, there are considerations of other than financial character which are perhaps to be the determining factors in the situation. In the undertaking a twofold benefit is accomplished for the blind for the most part impossible in any other way. First, they are rendered to a certain, even though small, extent self-supporting, and may only thus feel a degree of independence. Second, they are afforded occupation, by means of which the dreadful curse of idleness is in some measure lifted from their shoulders.

Though special establishments are often the first form of industrial employment for the blind to engage attention, they do not constitute the sole form of such provision. For a certain portion employment outside of these, or in the regular occupations of the sighted, will prove not only more desirable on general grounds, but also more feasible in particular cases. The matter of such wider employment is to be considered later.

SPHERE AND PLANS OF WORKSHOPS FOR BLIND

Special establishments for the blind may be undertaken under private or under public auspices. In either case they may be instituted as independent organizations or as a part of a general scheme of work for the blind. Under a comprehensive policy, shops or industrial centers may be created in those communities where there are congregated a sufficient number of blind persons capable of industrial employment. For an entire State or for a large tributary territory there may be provided some central station or a chain of small shops, whichever is deemed the more feasible.² In these establishments two things are to be done: instruction is to be afforded in the industries chosen as most suitable, and employment is to be given after the period of training. Here under proper guidance marketable goods are to be produced, and placed on the market through an efficient business system. For the

¹ Report, 1910, p. 15.

² As to a national institute for vocational training, see Proceedings of American Association of Instructors of Blind, 1920, p. 52. For a proposal of a national industrial establishment, see O. C. Brown, "Legal Wrongs against Blind," 1886, p. 13.

carrying on of the work a certain amount of sighted supervision and assistance is necessary; and this should be at once skilled, practical, and sympathetic. The shops should be conducted as far as possible on thorough business principles, and should be so recognized by the public. Hours of employment, methods of payment, and other features should likewise conform as far as possible with similar details in respect to normal labor.

As a general thing, the employees of the shops, especially those of them who are married, are to live in their own homes, coming to their places of work each day, after the manner of regular factory operatives. In this way their lives are made more like those of people round about them, they are benefited by associations with persons having sight, and they can feel a greater measure of independence. But where this arrangement is not feasible, or where there are a certain number who cannot live near their homes, or have no homes, a boarding department may be attached to the plant, with living supplied at the minimum cost.¹

Though the shop may be organized as an independent institution, yet to reach its maximum efficiency, it should fit into a general plan of service to the blind, especially if conducted by associations or commissions. It may also be concerned in a number of ways with blind persons outside. It may set up some in individual trades, furnishing where necessary tools and materials, and may provide others, particularly women, with some form of home work. It may even encourage any of its employees to leave when a desirable opening presents itself elsewhere. In addition to promoting the industrial welfare of the blind, the shop may be useful in other directions, having duties towards the blind in general. Like the school, it may now and then become the center for a considerable amount of "extension work," acting as an adviser or intermediary, directing libraries or home teaching, or performing similar tasks.

PRACTICAL CONSIDERATIONS INVOLVED IN CREATION OF WORKSHOPS

Theoretically, industrial establishments appear to be the solution of the economic problems of the blind. It is only when the practical

¹ Under the boarding arrangement, it is claimed that the lazy, incompetent, or incapacitated may be attracted. It is also argued that institution rules are not good for adults. See Report of Perkins Institution, 1849, p. 28; 1850, p. 15; 1851, p. 32; 1858, p. 24; *Problem*, ii., 1901, p. 13; Report of Wisconsin Board of Control, 1906, p. 464. On the other hand, it is sometimes contended for the living-in plan that homelike features are thus provided for otherwise homeless men; that the infirm can also have a home; that if the blind live out they are likely to have poor quarters; that it is often difficult to apportion wages to the needy; and that this is on the whole the less expensive arrangement. On the general question, see Proceedings of American Association of Instructors of Blind, 1874, p. 13; Proceedings of American Association of Workers for Blind, 1907, p. 117; *Outlook for Blind*, ii., 1908, p. 39.

application of the principle is undertaken that serious difficulties are found to present themselves.

In the actual conduct of the shops there are certain matters which have to be met and dealt with. These may be divided into two classes, which we may call internal and external difficulties. In the internal direction of the shops there are encountered handicaps of an order not experienced in general establishments.¹ For such a multiplicity of operations is sight depended upon that in its absence a severe and continued strain has to be endured, and an incumbrance to be contended with.² The blind must labor more slowly than persons able to use the eye, and even then they are liable to make frequent mistakes.³ In nearly all cases there will be certain processes accomplished only with the greatest pains, while in many even simple steps will present no little hardship. A considerable portion of the workers may have become blind late in life, with fingers perhaps far from deft, and it will be no easy matter for them to adapt their faculties to the tasks in hand. Very many of these, as well as others, will find it extremely arduous to learn and acquire a new trade. In all cases it is to be remembered that the possession of some sight, however little, is of the greatest assistance. With the labor-saving devices and mass machine production of today the problem becomes the more pronounced.

The difficulties to be experienced by blind workmen who enter industrial establishments have been thus expressed:

As a rule those who have been employed in such shops have become blind in middle life. It is necessary for them, therefore, to "learn to be blind"—which means that they will be long in acquiring that speed and efficiency which, since their product must be sold in the open market, is an essential if the industry is to pay. A more serious matter, however, is the fact that most of those who become thus blind in middle life have not been accustomed to use their hands in an occupation demanding industrial skill. They have to be trained, therefore, to manual dexterity; and this, with adults, is always difficult. . . . Manual processes without sight, if they are to result in good marketable products, may be done only under one or more of the

¹ In certain cases there may be fear that there will be too great an influx of applicants for the facilities of the establishments, though this may be guarded against to some extent by the limitation of admission to those having prescribed qualifications, including residence in the general locality. On the other hand, it may not always be found an easy matter to bring in all the blind who are eligible and are entitled to enter. On the latter matter, see Report of Michigan Employment Institution for Blind, 1906, p. 7; 1912, p. 69; *Charities and Commons*, xv., 1906, p. 634.

² It has been generally believed that the blind can operate machines but little, but in some shops broom-making machinery, power sewing, etc., have been successfully installed.

³ A blind person is said to have but one-third the ability of a person with sight. Report of Supervisor of Administration Relative to Advisability of Providing Pensions for Needy Blind, Massachusetts, 1917, Senate no. 326, p. 12. Another opinion is that the former possesses two-thirds the efficiency of the latter. Report of Missouri Commission for Blind, 1916, p. 4. See also Report of Massachusetts Commission for Blind, 1925, p. 51.

following conditions: (1) more slowly, *i. e.*, most manual processes are much slower without sight than with; (2) with supervision, *i. e.*, sight, and therefore supervision, is necessary to the preparation for marketing almost all finished products; (3) division of labor, *i. e.*, most processes have some steps, however few, which can be taken only with the aid of sight.¹

The situation has been further stated as follows:

No matter how experienced the blind workman is, he cannot in the nature of the case be as skillful as the sight workers, and therefore cannot go into the wage market to compete with a man who has his eyes. The latter can always outwork and underbid his blind competitor, . . . while his sightless rival hears no demand for his services.²

In many stages of the work, moreover, the attention of sighted persons is necessary, while finishing touches have often to be put upon it by such hands. Indeed, so important is the constant attendance in the shops of operatives able to see that they constitute an integral and a very considerable part of the employed force. The extent of sighted help will vary in different shops. The present proportions are from one in three to one in ten, the number usually being in inverse ratio to the size of the establishments. A very material consequence of this situation is that a large part of the amount paid in wages must go to workers having sight, which sometimes may reach more than a third of the total sum.³

Perhaps, however, the prime and basic difficulties in the conduct of industrial concerns for the blind are of an external character: in getting upon the market products which are almost certain to be placed there also by other agencies. In this matter there are several economic considerations involved. To prepare goods of such quality as to meet on even terms those of competitors, a great strain is imposed upon the shops. This means that additional sighted help will have to be called into requisition; or more careful, and consequently slower, work on the part of the blind will have to be done. If the product of the labor of the blind is measurably inferior to that offered by others, sales of the former cannot be expected—unless they are inspired by charity, and this would defeat the very principles upon which the special shops are founded. The industries, furthermore, which are open to the blind are, as we have seen, of a limited number, and hence there are likely to be thrown upon the market, if the shops are at all large, considerable quantities of goods of a very few kinds. In such case the articles are

¹ *Ibid.*, 1910, pp. 15, 17. See also Bulletin of Iowa Institutions, i., 1899, p. 58; *Outlook for Blind*, vi., 1912, p. 23; Report of Pennsylvania Working Home for Blind, 1894, p. 9.

² *Ibid.*, 1900, p. 9.

³ Other factors affecting the success of the special shops are quantity purchasing, extent of use of machinery, etc.

apt to become a drug with respect to these particular trades. The result will be one of three things: the warerooms of the shops will be overstocked with goods that cannot be disposed of; the shops will have to shut down for certain periods; or the workers will have to be employed in shifts or on part time.¹

To render the situation even more unfavorable to the interests of the blind, it happens that the industries available for the blind, being comparatively simple in their nature, are not only found rather extensively in the general field of employment, but are also those most likely to be selected in certain institutions engaged in industrial work as but an incident to their main purposes. Thus broom making, an occupation peculiarly suited to the blind, is also in a considerable degree adapted to prison labor, and it has been a not unimportant form of such labor. Similarly, the caning of chairs, another especial industry of the blind, has been taken up at times in the workshops of charitable and similar organizations. Still another competitor may be an institution like that for the insane. Besides brooms, there are involved brushes, rugs, mattresses, etc.

Yet the difficulties which we have enumerated are not to be taken as prohibitory, or as a bar to the successful operation of the shops. They are rather to be regarded as among the factors which have to be taken into consideration. They may even be looked upon as a spur to compel undertakings upon strictly practical and scientific principles.

The main essential is that there be a full adjustment to existing conditions, which requires a study of the general practicability of the industries to be employed, of the capabilities of the workers, of the local situation, of neighboring competition, of the means of marketing, and of similar circumstances. With regard to competition with public custodial or public or private philanthropic agencies, the blind have a right to expect that due attention be given to their condition and needs, and that the labor of others be regulated accordingly.² The

¹ By the Massachusetts Commission for the Blind it is stated with respect to its own shops: "A broom factory in a neighboring city pays $8\frac{1}{2}$ cents per dozen for house brooms sewed on a power machine, and men make \$3 to \$4 per day at it. Our men, on the other hand, blind and working by hand, are paid 43 cents per dozen, and have difficulty in earning \$1.50 per day." Report, 1912, p. 41. If a profit is to be made, brooms must be sold at 25 per cent above regular prices. *Ibid.*, 1925, p. 43.

² For a protest against prison labor in brooms, broom making being one of the few things that the blind can do, see *Outlook for Blind*, iv., 1911, p. 171; March, 1929, p. 44; xxvii., 1933, p. 19; Proceedings of American Association of Workers for Blind, 1911, p. 35; 1929, p. 189; Report of New York State School, 1906, p. 37; Report of Ohio Department of Public Welfare, 1925, p. 46; 70th Cong., 1st sess., 1928, House of Representatives, Hearings before Committee on Labor ("Prison-Made Goods"), pp. 7, 46; Senate, Hearings before Committee on Interstate Commerce ("Convict Labor"), p. 73. For a similar view with respect to charitable institutions, see *Outlook for Blind*, ix., 1916, p. 101. For a proposal of a special tariff on rugs such as are made by the blind, see Proceedings of American Association of Workers for Blind, 1927, p. 217.

not unreasonable demand may also be advanced that the products of public shops be used as far as possible in public institutions, which will be economy to the state no less than distinct aid to the blind.¹

Not only are the shops to be conducted after business methods and principles, but in the products turned out intrinsic excellence is to be secured at all hazards, so that no apologies will have to be forthcoming for inferior work, the articles selling on their merit alone, without appeal to sympathy or charity.² An additional requirement is that the public be made fully acquainted with the wares of the blind, and a demand for them thus created. Many persons are incredulous with respect to the goods of the blind, while some are quite ignorant of their significance. Judicious and well-directed advertising may be necessary.³

One further matter remains to be considered in connection with the creation of industrial establishments. We have seen that they cannot be expected to pay their expenses, and that a certain pecuniary outlay is necessary for their creation and maintenance, for the providing of which public or private resources will have to be looked to. We shall even discover that in not a few instances it costs more to operate the shops than it would to make the blind an outright grant of money. Under these conditions one question naturally arises. Does not the scheme, no matter by what name it is called, come to "charity" in the end, whether of a private or of a public kind? In one sense, it may be granted, it is so; but in the broader aspects of the issue it is hardly thus to be characterized. The proper way to look upon the matter is that means are but afforded for the blind to earn a greater or less part of their living, to which end a stimulus is held out and assistance lent.

In such a state of affairs, however, an even more important question is presented. Is not this after all but the "making of work" for the blind? Does it in its essence amount to anything different? And is this not an economic mistake, evidence of the illusiveness and fallacy of which is found in nearly every case where resort has been made to it? The reply to such questioning, if a strict application of the principle be insisted upon, must be an affirmative one. The charge that in the institution of workshops for the blind society is but "making work" will have to be admitted, for as independent economic affairs alone they will have to fall. The real answer, however, is of larger bearing.

¹ This plan is on the order of the State-use system for prison-made articles. See Report of Massachusetts Commission for Blind, 1925, p. 52.

² The better results are to be expected in fields where competition is at a minimum, or where the output for a given article is limited. Low-priced or seasonal products are to be avoided so far as is feasible. Greater success is always to be looked for with relatively competent blind persons.

³ For an appeal that the public purchase the goods of the blind, see Report of Missouri Association for Blind, 1912, p. 12.

The problem is to be settled upon different grounds. The true object of the establishments is to enable the blind to contribute to some extent to their own support, and thus to become, as far as the limitations imposed by their condition will permit, independent citizens of the state. And in the giving of employment to the blind, however short it may come of accepted economic standards, they receive what is the priceless boon of humankind—the blessing of toil—to which they are no less entitled than other men.

If, furthermore, it be discovered that in their shops a substantial wage is being paid the blind, rather than a very low or a nominal wage, there exists all the greater justification for them.

The success of the shops, in short, measured in terms of their costs, will depend upon various factors: selectivity of workers, character of industries chosen, quality of products created, extent of use of sighted help, extent of use of machinery, nature of and facilities for marketing, quantity purchasing of material, etc.—besides such considerations as whether a home is to be attached to the shop, the extent to which training in production rather than production itself is the basic aim, the extent to which rehabilitation or therapy is to have part in the undertaking, and other like considerations.

OCCUPATIONS TO BE AFFORDED IN SHOPS

The matter of occupations to be afforded in the shops for the blind belongs rather to the practical side of the industrial establishments. It is only after they have been tested by experience that we may know the feasibility of different ones. In this place it may merely be noted that the range of employment hitherto found available is exceedingly restricted, being mainly confined to the caning of chairs, and the making of brooms, mattresses, baskets, mops, rugs, brushes, fancy work, aprons, and a few like articles—with occasionally other trades in particular shops.¹ For some time these seem likely to remain the chief occupations for the blind, though it is possible that others will be found practicable.

WAGES TO BE PAID IN SHOPS

The wages paid to the blind workers in their shops need not be expected to equal those paid to sighted workers. Earnings will naturally be dependent in the greatest measure upon individual ability—and it is again to be called to mind that the possession of even the slightest degree of sight counts for very much. As the want of the sense of vision, however, enters so largely into the equation with

¹ Perhaps wooden toys, doll wigs, and like articles are to be included.

respect to most of the employees, involving, as we have seen, slower labor and the assistance of seeing persons, only the smallest proportion can hope to approximate the wages paid elsewhere for the same grade and class of work. The actual wages received we are to examine later. We are also to find that about one-third of the receipts of the shops go as wages to the blind. It might be wished that a larger part could pass directly to them; but when all things are considered, it appears that a really high proportion is paid to them.¹ (The piece-rate system may often be the desirable one.)

We can hardly, then, look for most of the blind in their special establishments to earn a "living wage"—though we can derive some satisfaction from the circumstance that they can earn a part of their support. If the wage to be accorded them is to be brought up to what may be called a fair wage, some sort of bounty or bonus system will have to be put into requisition. If of the right sort, not only may substantial help be afforded in a way to do the least harm, but an incentive may be provided for the fullest return of labor on the part of the workers. In several States special systems have been adopted which may be suggestive in the working out of the problem. In Massachusetts a wage of \$2 a week has been considered to be a minimum of industrial efficiency, those not found able to earn this sum being regarded as incapable of remunerative labor; at the other extreme a wage of \$6 a week has been considered sufficiently large to make other assistance unnecessary; between these figures there has taken place what is called the wage "augmentation": for every cent earned over \$2 one-half cent has been added up to \$6. In Pennsylvania there has been added to the weekly wage earned the difference between three-fifths of such wage and \$9, which has been regarded as the "basic handicap allowance" (with due reduction for less than full time). In Wisconsin \$3 above a "living wage" has been paid. In certain States a bonus has been paid according to length of time one has been at work. Other "bonus" systems are to be availed of.² There is also possible the employment of a flat minimum wage.³

¹ Complaint has sometimes been made that, from a purely business point of view, the wages paid are really too high. On the other hand, an establishment with low pay has been referred to as a place "where pride in work is destroyed by a 15 or 20 cents daily wage." Report at San Francisco Association for Blind, 1913, p. 8. On wages for the blind, see also Report of Michigan Employment Institution for Blind, 1912, p. 12; Proceedings of American Association of Workers for Blind, 1909, p. 24.

² On these systems, see Report of Massachusetts Commission for Blind, 1910, p. 36; Proceedings of American Association of Workers for Blind, 1911, p. 21; Reports of Ten-Year Survey Committee of Work of Massachusetts Commission, 1916, pp. 28, 36; Report of Pennsylvania Association for Blind, 1929, p. 89; *Outlook for Blind*, Dec., 1929, p. 29; Report of Michigan Employment Institution, 1916, p. 37.

³ Suggestion has even been made of a maximum wage to be paid in the shops. *Ibid.*, 1906, p. 39 (Report of Executive Committee of Michigan Blind People's Welfare Association).

PROPORTION OF BLIND TO BE AFFECTED BY SHOPS

The question now arises as to what part of the blind can be put in the shops and made wage-earners—disregarding for the present the number for whom it may be possible to provide other forms of industrial employment. In answer, we must understand that even if the industrial establishments became general, only the smaller portion of the blind population would be affected by them. The reasons for this are several. In the first place, a great number of the blind are too old for work—and it is to be recalled once more that a very high proportion of them are in advanced years of life. Moreover, many of the blind near or even below middle age will, from their already contracted habits of idleness, in some cases perhaps of considerable duration, have difficulty in training their hands for a new task, simple as it might be otherwise, and to such persons the required adaptability, far from easy in any event, as we have found, will not come in a short time. Furthermore, it is to be borne in mind that some of the blind of proper working age are mentally or physically wanting, while others are unfitted by their own temperament or manner of life for industrial occupation. Again, the shops are intended primarily for men, it being considered advisable that but a small proportion of the women be thus provided for. Finally, a certain number of the blind, especially of the women, are found to be employed in some manner or other in their own homes, where they are in a good many cases already better off than they could be if removed to some industrial establishment. From all this it appears that not a large part of the blind can be reached by the shops.¹

Let us now see if we may not form some estimate of the proportion of the blind who may be benefited by special industrial establishments. A liberal working age is from twenty to sixty. About 41,000 of blind males and 34,000 of blind females are of this age.² Possibly four-fifths of the latter are to be regarded as housewives or as cared for in their homes. There are thus some 48,000 blind persons in the United States who potentially might be gainfully employed. Of these there are a considerable number, which can hardly be less than one-third, to

¹ The situation may be summed up in the conclusions on the subject which were at one time arrived at by the Commission for the Blind of the State of New York: At least 65 per cent of them [the blind] are too old to acquire any industrial occupation, while another and unknown proportion of them are physically or mentally unsound. In the case of many who are sound, long enforced idleness has destroyed the desire to work, so that it would require time to overcome the indolence to which they have become habituated. Most of the blind, especially among the women, do not travel far alone, and hence they must reside near their work, or it must be carried to them. Report of New York Commission for Blind, 1904, p. 46.

² These estimates are on the basis of a blind population of 100,000.

be deducted by reason of being incapacitated, infirm, or otherwise unfit (physically or mentally) in one way or another.¹ With due allowance for all such classes, we have as the maximum number of the blind in the United States who might be given industrial employment (or otherwise industrially provided for) something like 32,000.²

¹ In Wisconsin two-fifths of the blind are reported as "incapacitated because of old age, disease, or pronounced subnormal condition." Report of Wisconsin Board of Control, 1926, pp. 85, 393. In California 17.4 per cent of the adult blind are reported to be suffering from physical disability, and 6.4 per cent from mental disability. California Department of Social Welfare, "The Adult Blind in California," 1929, p. 7. In Massachusetts of the blind in industrial shops 60 per cent are declared to have disabilities besides blindness. Report of Division of Blind, Department of Education of Massachusetts, 1921, p. 13.

² The proportion of the blind who are "employable" is said to be 32 per cent. Report of Minnesota Board of Control, 1924, p. 42. Another estimate is 40 per cent. Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 28. It is stated that, roughly speaking, one-third of the blind are cared for in their homes, one-third are in need of pensions or similar aid, and one-third are employable. Proceedings of American Association of Workers for Blind, 1931, p. 14. For other estimates, see *ibid.*, 1905, p. 22; 1907, p. 89; 1909, p. 54; Report of Ohio Commission for Blind, 1908, pp. 15, 21; Report of Missouri Commission for Blind, 1916, p. 8; Proceedings of National Conference of Charities and Correction, 1907, p. 489; Report of Illinois Board of Charities, 1909, p. 597; Illinois Bulletin of Public Charities, xi., 1909, 5, Dec., p. 131; Report of California Department of Public Welfare, 1926, p. 148; Report of New York State School, 1906, p. 78; Missouri School, 1915, p. 12; *Charities and Commons*, xv., 1906, p. 611; xvii., 1906, p. 141; *Outlook for Blind*, iv., 1910, p. 23; xii., 1917, p. 96.

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xxv., 1925, 2, Nov., p. 18; Ohio Bulletin of Charities and Correction, xv., 1909, 1, Feb., pp. 76, 82; xvi., 1910, 1, Feb., p. 32; 2, May, p. 62; xiv., 1908, 2, March, p. 91; xvii., 1911, 1, Feb., p. 170; xxiii., 1917, 1, Feb., p. 41; Bulletin of Missouri Board of Charities and Correction, 1910, no. 3, pp. 56, 61; Illinois Bulletin of Public Charities, xi., 1909, 5, Dec., pp. 124, 129; Illinois Institution Quarterly, v., 1914, 4, Dec., p. 131; ix., 1918, 3, Sept., p. 61; 4, Dec., p. 282; x., 1919, 3, Sept., p. 83; 4, Dec., pp. 58, 128; *American Machinist*, lv., 1921, p. 284; *Outlook*, lxxxii., 1906, p. 983; lxxxiii., 1906, p. 289; lxxxiv., 1906, p. 758; lxxxvii., 1907, p. 137; *Century Magazine*, xxxv., 1887, p. 329; lxxviii., 1909, p. 82; *Annals of American Academy of Political and Social Science*, lxxvii., 1918, p. 28; lxxx., 1918, p. 104; *Youth's Companion*, Jan. 4, 1906, p. 3; *Lend a Hand*, ii., 1887, p. 389; *Quarterly Review*, clxx., 1890, p. 59; *Putnam's Monthly*, ii., 1907, p. 70; *Spectator*, lix., 1887, p. 586; *World's Work*, vi., 1903, p. 3817; xiv., 1907, p. 9259; *Saturday Review*, lxxviii., 1889, p. 413; *Treasury*, excvii., 1916, p. 190; *Technical World Magazine*, xxi., 1914, p. 218; *Journal of Royal Society of Arts*, lxx., 1917, p. 474; *Nineteenth Century*, liii., 1903, p. 1050; *World Today*, xvii., 1909, p. 943; *Leisure Hour*, viii., 1859, p. 457; xiv., 1865, p. 808; *Fortnightly Review*, cxvii., 1924, p. 827; *Education*, xx., 1900, p. 298; *Household Words*, xix., 1859, p. 321; *Circle Magazine*, vi., 1909, p. 74; *Quiver*, 1890, p. 771; *National Magazine*, x., 1857, pp. 247, 301; *Sunday at Home*, 1889, p. 241; 1890, p. 396; *Cöoperation*, vii., 1907, p. 212; *New World*, i., 1919, p. 70; *Pine Tree Magazine*, v., 1906, p. 318; *Charity Organization Review*, i., 1885, p. 3; *Chambers' Journal*, lxi., 1892, p. 166; *Monthly Labor Review*, xxvi., 1928, 6, June, p. 53; xxxiii., 1931, 1, July, p. 109; 4, Oct., p. 858; *Engineering*, cxii., 1921, p. 715; *Sales Management*, xxxi., 1932, p. 359; *Industrial Management*, lvii., 1919, p. 105; *Transatlantic Trade*, vi., 1925, p. 256; *Science*, xxiii. (n. s.), 1906, p. 268; *American Merchant*, lv., 1921, p. 1023; *Connecticut Magazine*, v., 1899, p. 171; *School Arts Magazine*, xxvii., 1927, p. 203; *Technology Review*, xxvii., 1925, p. 182; *Everybody's Magazine*, xix., 1908, p. 498; *Farmers Advocate*, Jan., 1925, p. 10; *Leslie's Weekly*, March 29, 1906; *Christian Register*, cxcviii., 1919, p. 465; *American Review of Reviews*, xxxiii., 1906, p. 730; *American Magazine*, June, 1927, p. 74; *Nebraska Medical Journal*, v., 1920, p. 218; *Philadelphia Medical Times*,

xiii., 1883, p. 469; *Ophthalmology*, vii., 1911, p. 553; *Ladies Home Journal*, April, 1909, p. 76; *Nation's Health*, iii., 1921, p. 470; *Radcliffe Quarterly*, Aug., 1917, p. 106; *Welfare Magazine* (Illinois), xix., 1928, p. 114; *Modern Hospital*, ix., 1917, p. 80; xxv., 1925, p. 164; xxvi., 1926, p. 382; *Carry On* (U.S. Surgeon General's Office), March, 1919, p. 19; May, 1919, p. 29; *American Journal of Care for Cripples*, viii., 1919, p. 44; vi., 1918, p. 41; *Occupational Therapy and Rehabilitation*, vi., 1927, p. 463; *Journal of National Institute of Industrial Psychology*, v., 1931, p. 334; *Southern Workman*, xlvi., 1917, p. 671; *Charities Review*, i., 1892, p. 185; *Charities*, xii., 1904, p. 62; *Charities and Commons*, xiii., 1905, p. 497; xv., 1906, pp. 567, 607, 624-645, 674; xvii., 1906, pp. 140, 405; xvii., 1907, p. 820; *Survey*, xxiv., 1910, p. 305; xxvi., 1911, p. 286; xli., 1919, p. 665; *Problem*, i., 1900, pp. 29, 90; ii., 1901, pp. 9, 16, 53; iii., 1902, p. 56; iv., 1903, p. 40, and *passim*; *Talks, Tales, and Public Opinion*, Oct., Dec., 1902; March, 1906; March, 1907; May, 1910; *Voices from Darkland*, Dec., 1914; *Ohio Harp* (Ohio School), i., 1904, p. 83; v., 1909, p. 84; *New Era* (New York State School), 1896, p. 86; *Mentor*, ii., 1893, p. 361; iv., 1894, p. 18, and *passim*; *Utah Eagle* (Utah School), 15, Feb., 15, May, 1902; *Colorado Index* (Colorado School), 1, 15, Oct., 1903; *Beacon*, Aug., 1923; July, 1924; Aug., 1925; Dec., 1928, and *passim*; *The Blind*, i., 1898, pp. 5, 40, and *passim*; *Teacher of Blind*, *passim*; *Outlook for Blind*, i., 1907, p. 91; ii., 1908, p. 10; ii., 1909, pp. 103, 187; xiii., 1919, p. 13; xv., 1921, p. 129; xvi., 1922, p. 59; Sept., 1924, p. 59; March, 1926, p. 57; Dec., 1927, p. 24; Sept., 1928, p. 42; Dec., 1928, pp. 37, 41; xxvii., 1933, p. 28; and *passim*. See also current reports of schools for the blind; reports and other publications of various organizations for the blind in United States and Great Britain.

CHAPTER XLIII

HISTORY OF WORKSHOP MOVEMENT IN UNITED STATES

BEGINNING OF MOVEMENT IN CONNECTION WITH SCHOOLS FOR BLIND

While it is possible that there is at present a greater demand for industrial establishments for the blind than ever before, it is, notwithstanding, to be constantly borne in mind that such affairs are not a new thing. As we have just had occasion to notice, the schools in a number of instances had not been in operation any length of time when attention was directed to the need of industrial provision for the blind, some coming to the belief that it was their duty, after undertaking the industrial training of their pupils, to offer industrial facilities to their graduates, and even to other adult blind persons. In many of their early reports and elsewhere the question of workshops is discussed in its several phases, and often in much detail, and with very considerable understanding. The desire for provision of an industrial character was widely shared; and with certain of the schools the feeling crystallized in the actual starting of shops as part of their work. Though establishments have later been undertaken from time to time as independent affairs in various communities, it is these schools that remain the pioneers in the workshop movement.

Within a few years after the founding of the Perkins Institution at Boston, there was felt the need of some sort of industrial provision for certain of the adult blind. In 1840 an employment department was opened for some of the former pupils. Three years later this was extended to include other adult blind persons whose wants began to be recognized as well, the school providing quarters for both classes. In 1850 a special plant was created, made possible in part by a special appropriation from the State of Massachusetts.¹ In 1863 a laundry was set up for women, but proving a failure, was abandoned in 1867. The shop for men has continued with little change to the present day.²

The New York and Pennsylvania institutions likewise at an early date, for reasons already referred to, established shops for adults as an extension of their work, but unlike the Boston school subsequently gave them up. In the former case in 1845 an industrial department,

¹ Laws, 1849, ch. 77.

² See Report of Perkins Institution, 1840, p. 8; 1844, p. 14; 1845, p. 11; 1850, p. 10; 1863, p. 21; Report of Massachusetts Board of Charity, 1864, p. 74.

known as the "home for the industrious blind,"¹ was created for graduates only, which in 1849 was expanded to include others among the adult blind. At first the plan had promising prospects. After five years of operation, it was declared: "So far as the experience of a single year can determine, our efforts have been crowned with the most encouraging success."² So great did the number of the blind who sought admittance prove to be that it was said to be "impossible to satisfy the requests of the constant applicants."³ In 1848 the State legislature, after an appeal made to it, began to allow appropriations directly for the benefit of the shop, which continued during the remaining years of its existence.⁴ Funds of no inconsiderable amount were also raised from private sources.

As time went on, however, it was discovered by the promoters that the results were not proving of a kind to indicate the real success of the undertaking. It was found that a large part of the goods manufactured could not be marketed, and that they consequently fell back upon the shop, sometimes choking up its storerooms. It became apparent, says a writer narrating the experiences of the shop, that "the local wholesale and retail markets did not absorb the goods that were produced;" nor was the situation bettered despite "every effort to find a wider market in other States."⁵ Debt was incurred to make the venture a paying one, to be extinguished by further legislative grants and private gifts, and the promoters went ahead with their operations.

But after a few years it was seen that this state of affairs could not be kept up; and in the end the trustees of the school advised a discontinuance of the shop. After ten years they were ready to disaffirm what had before been so joyously announced, and to admit that "the efforts to provide permanent employment for the adult blind have not been crowned with success."⁶ In 1857 they stated that the shop had continued operations, but—

At a heavy loss to the institution, and the experience of some years has now been fully demonstrated that sharp competition of seeing workmen backed by the capital of employers, engaged in the various trades, puts it out of the power of the institution to conduct this department on a scale

¹ See Report, 1845, p. 8; 1848, p. 7.

² *Ibid.*, 1850, p. 22.

³ *Ibid.*, 1854, p. 6. Many blind persons are said to have been drawn to the city in consequence of the shop. *Ibid.*, 1856, p. 8.

⁴ Laws, 1848, ch. 193; 1857, ch. 278. Appropriations were usually from \$8000 to \$15,000, it often being a condition that an equal sum be secured from private sources.

⁵ W. B. Wait, "Effort and Progress," 1908, p. 6; *Charities and Commons*, xvii., 1906, p. 147.

⁶ Report, 1856, p. 7. "From the causes already alluded to, there is little or no sale for its manufactures, and great pecuniary embarrassment is the necessary result." Message of Governor of New York, 1855, p. 11.

in any way commensurate with the wants of the blind, without incurring a loss which our funds are by no means adequate to meet.¹

Finally, in 1860, after the last of persistent and tenacious efforts, and when "the results had proved so disastrous" as to cause the losses to mount to a large sum,² the legislature was appealed to to put an end to the situation. This it did in 1862, repealing the laws relating to the shop; and so after an existence of a little less than a score of years, the industrial department of the institution came to a close.³

Immediately after the dissolution of this shop, another experiment was tried in the city of New York in the way of industrial aid for the blind, which was intended to be a more practicable substitute. In 1862, the year that the shop was abandoned, a charter was granted to the New York Blind Mechanics' Association, an independent organization, which was to furnish a mechanical education to the blind, and to assist in procuring employment for those found capable, besides carrying on a few trades. Small appropriations were made by the legislature from time to time, while aid came from the city and from private sources. After some eight years this plan was also given up as a failure.⁴

The Pennsylvania Institution seems to have considered a "home" or "retreat" for the employment and maintenance of former pupils very soon after its founding, though the measure was not found

¹ Report, 1857, p. 6. It is also stated that the department "has continued a deadweight, and experience has now fully demonstrated that it is impossible to conduct it in any way commensurate with the needs of the blind, without incurring a loss which it is impossible to sustain for any length of time." *Ibid.*, 1858, p. 9. Nor could private benevolence, generous though it was, be greatly depended upon. "Experience has shown that this feeling can be relied on only to a very limited extent." *Ibid.*, 1856, p. 8.

² Special Committee of New York Institution, Review of Efforts of New York Institution to Instruct Its Pupils in Mechanical Trades, and to Maintain Manufacturing Establishment in Connection with Its Educational Work from 1832 to 1885. See also Report of New York Institute, 1901, p. 20; 1931, p. 33.

³ Laws, 1859, ch. 629. The wages paid in the establishment were high, being said to be 25 per cent above those usually paid for the same labor. Industries to the number of sixteen were tried. At one time the institution was said to have developed into five departments: a school for the young, an industrial training school, a shop, a boarding department, and an asylum. In 1855 all employees were required to live outside. See Report of New York Institute, 1860, p. 11; 1854, p. 15; W. B. Wait, *op. cit.*; *Charities and Commons*, xvii., 1906, p. 140; *National Magazine*, x., 1857, p. 253.

⁴ Laws, 1859, ch. 278; 1862, ch. 411; 1863, ch. 210; 1864, ch. 401; 1865, ch. 641; 1867, pp. 1158, 1254; 1868, chs. 817, 853; 1870, ch. 383. At one time the supervisors of New York County were authorized to levy a tax of \$10,000 for the benefit of the Association. Laws, 1864, ch. 551. This organization was in considerable part founded to receive a grant of \$8000 from the legislature, to be available when an equal sum was secured from private sources. The city gave the rent of a building free. Including private gifts, some \$71,000 was said to have been received in the course of ten years. Direct aid seems to have been given to the blind through the Association. At one time it was declared that "applications for donations from the city to blind persons are rapidly increasing." See Constitution and By-Laws of New York Adult Blind Association, 1877, p. 7; Senate Documents of New York, 1865, no. 22; Assembly Documents, 1867, no. 57; W. B. Wait, *op. cit.*, p. 7; Resolutions of Board of Aldermen of City of New York, 1866.

feasible till 1851.¹ For its first few years the department seemed to enjoy a degree of prosperity, it being declared that "the undertaking has completely succeeded,"² and that "the successful results are before us."³ In 1863 it was announced that "the practical working of the 'home' after twelve years of experience has been entirely satisfactory."⁴

In the course of time, however, this establishment also began to meet other fortunes. Deficits commenced to appear; and it was decided to relinquish the shop feature, which was done after nearly a score of years of its existence. One reason for this action was that another arrangement had already come into being, and the need of the shop was no longer so evident. Two independent institutions with more or less industrial features had been established in Philadelphia, one for men and one for women; and the policy was adopted of allowing no more new admissions into the "home" in connection with the school, which in 1883 was abandoned altogether.⁵

Another school maintaining an industrial department was that in Maryland, which had quite an extended career. It was started in 1858 for the benefit of certain of the graduates, and in 1874 enlarged into a shop for other adults as well.⁶ In this case enthusiastic hopes as to the outcome of the venture were not indulged in. After an experience of a few years it was asserted that "the shop may still be regarded in the light of an experiment," and that "the past year has not been encouraging."⁷ Finally, the school was ready to make the avowal that it was "satisfied that the necessity for workshops for the adult blind does not exist in this State."⁸ The result was the abandonment, after a brief trial of four years, of the industrial feature for adults. The school, however, retained a department for certain of its graduates till 1908, when a distinct public establishment was created.

In certain other States schools for the blind attempted to carry on

¹ See Report, 1843, p. 6; 1846, p. 10; 1850, p. 16; 1851, p. 11; 1853, p. 26; 1854, p. 16; 1858, p. 16.

² *Ibid.*, 1860, p. 10. "The tone of the school" was "really elevated by the presence" of those received.

³ *Ibid.*, 1861, p. 6.

⁴ *Ibid.*, 1863, p. 13.

⁵ The industrial department was called both a "home for the industrious blind" and a "retreat," often being designated as the "home department" of the institution. Most of the inmates were women. A few of the inmates accepted at an early date were allowed to remain at the institution during their lifetime.

⁶ Laws, 1874, ch. 236. See Report of Maryland School, 1857, p. 8; 1858, p. 9; 1871, p. 10; 1872, p. 11; 1874, p. 10.

⁷ *Ibid.*, 1876, p. 9.

⁸ *Ibid.*, 1877, p. 10. See also *ibid.*, 1875, pp. 16, 35. One reason that was advanced for the discontinuance of the shop was that there was a lack of capital sufficient to carry on operations, and that some of the blind found themselves able to get more by begging. On this shop, see *ibid.*, 1911, p. 20; 1913, p. 13; *Outlook for Blind*, ii., 1908, p. 3.

industrial departments on a small scale for graduates or other adult blind persons for a longer or shorter period, only after a few years to discontinue them. Among these were the schools in Illinois,¹ Louisiana,² Michigan, and Missouri,³ and the New York State School. In several States, in addition, the matter was considered or was proposed.⁴

Here is practically brought to an end our recital of the efforts of the schools to create and conduct shops in connection with their regular work of instruction, the plan being subsequently attempted in but one or two instances. In most cases these industrial departments were of experimental character, and of but rather brief duration. In first accounts are displayed hope and even enthusiasm as to expected results, coupled with able and earnest endeavor, which later gave way to discouragement, and to the admission that it was not a wise procedure on the part of schools to attempt to offer industrial facilities to the adult blind.⁵ On the whole, then, it may be said that these early efforts of the schools met with but little success: their greatest service consists in the lessons which they have afforded.

DEVELOPMENT OF SHOPS AS INDEPENDENT UNDERTAKINGS

With the way pointed and the example set by the schools in their industrial activities, there remained the possibility of the creation of shops as independent affairs, under public or private auspices, which was to be the course henceforward. The first establishment of the kind to be put into operation was the Pennsylvania Working Home for Blind Men, which was opened in Philadelphia in 1874, being in fact partly the outgrowth of the work department originally started at the Pennsylvania Institution—and in fact designed to draw the adult blind from it. It still continues as a private concern, though it has received aid from the State.⁶ The next undertaking was in Louisville

¹ See Report of Illinois School, 1872, p. 6.

² In 1871 the "School and Industrial Home for the Blind" was organized, under which name it remained for several years. In 1877 the separation of the industrial department was asked for. See Report of Louisiana School, 1869, p. 15; 1870, p. 13; 1873, p. 72 (quoting from *New Orleans Times*); 1877, p. 10; 1886, p. 5; History of Louisiana School for Deaf, 1893, p. 6.

³ See Report of Missouri School, 1855, p. 12; 1862, p. 3.

⁴ See Report of Tennessee School, 1855, p. 58; 1859, pp. 5, 11; 1861, p. 9; 1871, p. 12; Kansas School, 1884, p. 7; *Institution News* (Texas School), Dec., 1892. See also Report of Arkansas School, 1880, p. 21. In California, Iowa, and Ohio, as we shall see, the proposal mainly took the form of an independent plant. In New York and Pennsylvania special shops were proposed instead of second schools. In several cases there were for a time joint boards of trustees for the industrial shop and the State school.

⁵ With respect to the efforts of certain schools, it is stated that they "have each had a long, trying, and costly experience in this matter." Report of New York Institute, 1901, p. 21. See also *National Magazine*, x., 1857, p. 252; *World Today*, xvii., 1909, p. 943.

⁶ See Laws, 1881, ch. 159; 1885, p. 281.

in 1882, this being known as the Kentucky Manufacturing Establishment for the Blind. It continued operations for about a dozen years.¹

The first direct public measure was the creation at Oakland in 1885 of the California Industrial Home for the Adult Blind. This institution has been regularly supported by the State to the present.² Within the next five years four establishments came into being, only one of which, however, has been of a durable character. In 1886 the State of Ohio established an industrial home at Iberia, which lasted for ten years.³ In 1887 Illinois did likewise, creating the Illinois Industrial Home for the Blind at Chicago, this continuing to the present.⁴ In 1888 a private establishment was opened at St. Joseph, Missouri, which was of only a few years' duration.⁵ In 1890 the State of Iowa created an industrial home at Knoxville, which was given up after an existence of ten years.⁶

From this time on nearly all the shops that have been started have continued to the present. The year 1893 saw the establishment of two private ones, with some public aid, the Connecticut Institute for the Blind (Trades Department) at Wethersfield,⁷ and the Brooklyn Industrial Home for the Blind in New York.⁸ In 1899 a private establishment was started at Indianapolis, which in 1915 was adopted by the State;⁹ and in 1900, the Columbia Polytechnic Institute for the Blind at Washington, with some aid from the Federal Government.¹⁰

¹ Laws, 1882, p. 256. This was a private stock corporation, capitalized at \$25,000. It received certain State aid, especially in the use of a building, as well as assistance from private sources. See *Kentucky Mfg. Establishment for Blind v. Louisville Trust Co.*, 16 Ky. Law Rep., 131, 26 S. W., 582 (1894); *Mentor*, I., 1891, p. 160.

² Laws, 1885, p. 18; 1887, p. 160; 1889, p. 147; 1907, p. 790; 1913, p. 806; 1921, p. 1048; 1927, ch. 396; 1929, p. 1850; 1931, ch. 992; Pol. Code, 1931, §§ 2207-2207e; Gen. Laws, p. 365.

³ Laws, 1886, p. 136; 1896, p. 370. The land and building, with \$5000, were given by the city. The location first planned was Columbus. Not many years after the school was started, it had proposed an "asylum for the industrious blind," at one time the city of Cincinnati being suggested for it. See Report of Ohio School, 1846, p. 9; 1848, p. 13; 1852, p. 13; 1881, p. 14; 1890, p. 18; 1891, p. 15; 1895, p. 102 (5th reunion of former pupils); Report of Ohio Board of Charities, 1892, pp. 25, 66; O. C. Brown, "Legal Wrongs against Blind," 1886, p. 25; J. W. Welch, "Abilities and Achievements of Blind," 1905, pp. 104, 396.

⁴ Laws, 1887, p. 25; 1912, p. 66; 1931, p. 1; Rev. Stat., 1931, pp. 263, 264.

⁵ Report of Missouri School, 1889, p. 18.

⁶ Laws, 1888, ch. 190; 1890, ch. 53; 1892, ch. 51; 1898, ch. 118; 1900, ch. 103; 1904, ch. 80. This was largely a farm colony, the city giving 50 acres of land at the opening. At the end the inmates owed \$5740 for board and lodging. Each inmate was given the sum of \$25. See Report of Commissioners in Relation to Industrial Home for Adult Blind, 1889, p. 4; Proceedings of Minnesota Conference of Charities and Correction, 1899, p. 62; Report of Iowa Board of Control, 1901, p. 110. Shortly after the State school had been established, suggestion was made of an industrial home. Report of Iowa School, 1869, p. 19; 1871, p. 11; 1875, p. 19; Message of Governor, 1870, p. 17. In 1870 the school was authorized to conduct an industrial home. Laws, ch. 79.

⁷ Laws, 1893, ch. 156; 1895, ch. 303; 1899, ch. 218; 1901, ch. 164; 1905, ch. 66; 1921, ch. 231. See also Report of Connecticut Board of Charities, 1894, p. 56.

⁸ It is provided in the charter of the city of New York that the sum of \$2500 annually be granted. Laws, 1897, ch. 378, § 230; 1901, ch. 466, § 230.

⁹ Laws, 1915, chs. 59, 170; 1921, ch. 72; Ann. Stat., 1926, §§ 4056-4070.

¹⁰ See *Washington Life*, April 8, 1905.

In 1903 two establishments were created under public direction: the Michigan Employment Institution for the Blind at Saginaw,¹ and the Wisconsin Workshop for the Blind at Milwaukee.² In 1904 a shop was opened at Cambridge, Massachusetts, now with two branches, and in 1905 at Pittsfield, both under the auspices of the Massachusetts Association for the Blind. In 1906 these were taken over by the State commission; and in 1908 others were established by it at Lowell and Worcester, and in 1909 at Fall River. In the year 1906 four shops were started in two other States, all by local associations for the blind: at New York City and Buffalo in New York, and at Cleveland and Dayton in Ohio. (The last named shop was discontinued in 1916.) In 1907 a public shop was established at Denver, Colorado,³ and a private one, with State aid, the Maine Institution for the Blind, at Portland.⁴ In 1908 the State of Maryland created at Baltimore the Maryland Workshop for the Blind, this being in a measure a continuation of the shop which had been in connection with the school.⁵ The same year a private shop was started at Wilmington, Delaware, with public aid. In 1909 a shop was established at Salt Lake City, Utah, under the State school. In 1911 shops were opened by associations at Pittsburgh, Pennsylvania (later with public assistance), and Trenton, New Jersey (later discontinued). In 1912 private establishments were started at Cincinnati, Ohio, New York City (Brooklyn), New York, and San Francisco, California, and a public one at Columbus, Ohio. In 1913 private shops were created at Albany, New York, Denver, Colorado, and St. Louis, Missouri (in 1916 with State supervision); and public ones, at Louisville (the Kentucky Workshop for the Adult Blind, later in connection with the State school)⁶ and Portland (the Oregon Employment Institution for the Blind).⁷ In 1914 private shops were opened at Glens Falls, New York (with State supervision), and Minneapolis, Minnesota. In 1916 private shops were started at Birmingham, Alabama (at first public),⁸ St. Louis, Missouri, Chicago, Illinois, and Rochester, New York. In 1917 private shops were opened at Syracuse, New York, and Manchester, New Hampshire (later removed to

¹ Laws, 1903, no. 169; 1907, p. 513; 1911, no. 140; 1913, no. 269; 1925, no. 226; 1931, no. 267; Comp. Laws, 1929, §§ 7997-8021. See also Report of Michigan School, 1898, p. 16; 1900, pp. 7, 14.

² Laws, 1903, ch. 432; 1905, ch. 345; 1907, chs. 118, 506; 1913, ch. 773; 1919, ch. 81; 1925, ch. 402; Stat., 1931, §§ 47.05, 47.06.

³ Laws, 1907, p. 217; 1913, p. 639; 1915, p. 355; Comp. Laws, 1921, §§ 743-752. See also Report of Colorado Board of Charities and Corrections, 1904, p. 129.

⁴ Laws, 1907, p. 1440; 1909, p. 1248; 1913, p. 921.

⁵ Laws, 1908, ch. 566; 1929, ch. 271; Ann. Code, 1924, pp. 1199-1201; Supp. 1929, pp. 171-176.

⁶ Laws, 1918, ch. 60.

⁷ Laws, 1920, ch. 39; 1921, ch. 72; 1931, ch. 65; 1933, ch. 450; Code, 1930, §§ 35-4315-4325.

⁸ Laws, 1915, p. 920.

Concord);¹ and a public one at Newark, New Jersey (later discontinued). In 1918 private shops were begun at Kansas City, Missouri, St. Paul, Minnesota, and Seattle, Washington;² and a public one at Nashville, Tennessee.³

In later years shops have in general been under private auspices. In 1919 one was opened at Watertown, New York, and Duluth, Minnesota; in 1920 at St. Paul, Minnesota, Jefferson City, Missouri, Columbia, South Carolina (public),⁴ Youngstown, Ohio, and Harrisburg, Scranton, and Wilkes-Barre, Pennsylvania; in 1921 at New York City (Brooklyn), and Jamestown, New York; in 1922 at Grand Rapids, Michigan, Kansas City, Kansas (under State school),⁵ St. Joseph, Missouri, Providence, Rhode Island, and Charlottesville, Virginia (public); in 1923 at New York City (Brooklyn), New York; in 1925 at Kansas City and Joplin, Missouri; in 1926 at Boston, Massachusetts, Binghamton, New York, Roanoke, Virginia, and Mobile, Alabama; in 1927 at Houston, Texas, New Orleans and Shreveport, Louisiana, Los Angeles, California (public),⁶ and Reading, Altoona, Johnstown, Beaver Falls, and Lancaster, Pennsylvania; in 1928 at Chicago, Illinois; in 1929 at Atlanta and Augusta, Georgia, Anchorage, Kentucky, Dallas, Texas, and Utica, New York; in 1930 at Toledo, Ohio, and Elmira, New York; and in 1931 at Fort Worth, Texas, Savannah, Georgia, and Springfield, Missouri.⁷

MANNER OF CREATION OF SHOPS AND GENERAL PUBLIC ATTITUDE TOWARD THEM

Such represents the history of the workshop movement for the blind in the United States. Starting with the attempts of certain schools to be of benefit to a larger number of persons than their pupils alone, but passing from them into independent establishments, it is found to have spread over the greater part of the country. At first making headway slowly, but gathering strength in the course of time, it is seen to have reached its largest development in the years of the twentieth century. Some of the establishments brought into being have fallen by the way,

¹ See Laws, 1915, ch. 188.

² Laws, 1921, ch. 72; Comp. Stat., 1922, § 9999.

³ Laws, 1921, ch. 22; 1923, ch. 27.

⁴ See Laws, 1929, ch. 521.

⁵ Laws, 1913, ch. 303; 1915, ch. 328; Rev. Stat., 1923, §§ 76-1107-1110.

⁶ Laws, 1927, ch. 845; 1929, ch. 64.

⁷ Doubtless there have been other shops started at different times in one place or another. In a number of additional cities they have been planned. See Message of Governor of Texas, 1917, p. 17; Report of Connecticut Board of Education of Blind, 1924, p. 624. Mention may also be made of the establishment (Evergreen) at Baltimore under the Red Cross Institute for the Blind for persons blinded in the European War. See *post*, p. 636. In a few almshouses or other public institutions where a number of blind persons are assembled, attempts are made to provide employment.

but most have had an uninterrupted existence to the present. In the future an even greater progress is not unlikely to be witnessed—unless some other form of industrial provision is found to be more suitable or desirable.¹

The principle of the workshop may be said to have been accepted, theoretically at least, and for a longer or shorter time, by most workers for the blind. Indeed, it has often happened that on the formation of a private or a public body to deal with the problems of the blind, the first undertaking to receive consideration has been the opening of some sort of industrial establishment, sometimes at the first opportunity to be offered. When it has come to the actual creation of workshops, by whatever agency, there have usually been three chief difficulties to be faced: want of sufficient interest in the matter on the part of the general public, doubt as to the feasibility of the project, and reluctance to the incurring of the expense demanded by the project. Yet when sufficient appeal has been made to private philanthropy or to public authority, and the urgency of the undertaking has been fully presented, there has usually been a sympathetic ear extended.

In the efforts to create the shops credit is to be variously bestowed. To the devoted endeavors of certain individuals, both blind and sighted, much is to be accorded. Without their patience and determination not a few of the shops established would never have come into being. A very great part has been played by the State schools. In later years societies organized for the benefit of the blind have made the work a particular activity. Public agencies for the blind have taken a like concern, either prompting or being instrumental in the establishment of shops. Help has been lent in addition by churches, by certain civic bodies, and by other general organizations, including women's clubs, service clubs, and social welfare bodies.² Throughout much has been done by the blind themselves, either individually or collectively, the graduates of the State school sometimes displaying particular assiduity.³ In some cases a considerable amount of agitation, a part often in public meetings, has been necessary to focus public attention upon the matter, and to assure the required financial backing.⁴ Only

¹ Certain shops established from time to time by groups of blind persons have proved short-lived.

² A few shops have for a longer or shorter time been under the direction of some civic or social welfare body. The industrial home in Brooklyn, New York, was promoted by a church society to help the handicapped. See *Outlook for Blind*, March, 1924, p. 32.

³ Notable work has been accomplished by the State associations for the blind in Indiana, Maine, Maryland, Michigan, and other States.

⁴ In the case of some private establishments, fairs and other entertainments have been given to raise funds. In Maine a petition bearing 50,000 names was presented to the legislature, praying for action. In more than one State the Governor has manifested a keen interest in the movement. In the appeal of the Governor of Wisconsin to the legislature

occasionally has there developed any positive opposition to the project, though now and then a protest has been voiced by certain labor interests under the belief that a new source of competition was entering the market.¹

The declared object of the workshops has been in general twofold: to provide a place where the blind could have facilities for industrial training, and to provide a place where they might be engaged at work in order to help contribute to their own support. The aim of that in Illinois is thus given in the statute by which it is created:

To promote the welfare of the blind by teaching them trades and affording them a home and such employment as shall best tend to make them self-supporting, and consequently independent, using therefor the best known means and appliances.

The objects of the State industrial home in California have been stated to be:

First, the instruction of such blind admitted thereto in trade or trades, to enable them to contribute to their own support; and second, the furnishing of a working home for the adult blind who after learning a trade or trades desire to remain in the home as workers.

In Michigan the State industrial home is to be afforded "for the care, training, and employment of the blind," which is to consist of an "industrial or polytechnic school and factory, a working home and employment bureau, and a consulting library." In Wisconsin it is set forth that the indigent blind are to have work and be taught a trade.²

At the beginning of the movement with independent establishments, as had been the case with those created in connection with the schools, in many quarters there was entertained the hope that their way would be attended with success, though that this confidence was

allusion is made to "the vain attempts to find some authority in the law whereby worthy citizens and industrious mechanics deprived of sight by accident could obtain other means of existence than those to be found through private charity or the county poor-house." Message, 1903, p. 80. See also Message of Governor of Iowa, 1890, p. 26. On general efforts to secure workshops, see *Problem*, ii., 1901, p. 87; iii., 1902, p. 88; iv., 1903, p. 32; Report of Ohio School, 1905, p. 116 (8th reunion of former pupils); J. W. Welch, "Abilities and Achievements of Blind," 1905, pp. 104, 396; J. C. Mills, "Searchlights on American Industries," 1911, p. 273; Proceedings of American Association of Workers for Blind, 1909, pp. 29, 33; Program of 3rd Annual Entertainment of Benevolent, Literary, and Musical Society of Blind of Chicago, 1886; *Talks, Tales, and Public Opinion*, Jan., Nov., 1904; Report of Michigan Employment Institution for Blind, 1908, p. 9; 1912, p. 72; 1914, p. 34.

¹ A bill allowing State aid to the establishment in Indiana was vetoed by the Governor, owing to the antagonism of labor unions. Proceedings of American Association of Workers for Blind, 1905, p. 35. In Ohio opposition is stated to have come from the broom makers of the State. Report of Ohio School, 1895, p. 103 (6th reunion of former pupils).

² Some of the shops have had their names changed. A special tendency has been to leave off the connotation of "home." A few establishments have been called "lighthouses."

not shared in on all hands we have already had occasion to notice. A prevalent conception regarding the situation is found in the observations made in a preliminary investigation made in the State of Iowa as to the possibilities of an industrial establishment. After the quoting of encouraging accounts from other States, it is declared that—

From all sources, educational as well as industrial, to which the commission has applied, comes the universal recommendation for the establishment of a working home for the adult blind.¹

After the shops had commenced their operations and the results from them had in greater or less degree become known, there was experienced in not a few instances a reaction analogous to that experienced in connection with the undertakings conducted by the schools. This was mainly due to the fact, already discovered by the schools, that the expectations of those responsible for the creation of the shops were higher than were to be justified—and in part, doubtless, to sentimental considerations, which had been allowed to overbalance practical considerations in the whole matter.

Quite often attention has been directed to the high expenses involved in the undertaking. Not seldom doubt has been expressed as to the actual good accomplished by the shops, such feeling being all the more pronounced with respect to establishments having a boarding feature in connection. Not seldom have the shops had to face charges that their procedure was not in the interests of economy, and that their costs were proving actually greater than the returns to the blind therefrom. Now and then discontent has grown so great as to demand their discontinuance.² In Illinois the breaking up of the State industrial home was at one time advised on the ground that it was proving too costly a method for the care of the blind.³ In California the institution was characterized as “almost a poorhouse,” and the plan as “pauperizing the inmates.”⁴ Sources of dissatisfaction have also been found in

¹ Report of Commissioners in Relation to Industrial Home for Adult Blind, Iowa, 1889, pp. 4, 6, 8. See also Report of Ohio Board of Charities, 1892, pp. 25, 66.

² The industrial home in California “has not fulfilled the expectations of the promoters.” Message of Governor of California, 1887, p. 13. In respect to the enterprise in Iowa it has been stated: “When the industrial home for the blind was established, it was believed that it would be largely self-supporting. . . . Unfortunately, the expectations of the friends of the home were not realized, manufacturing was carried on at a loss, and the inmates were not able to pay for their board and lodging.” Report of Iowa Board of Control, 1901, p. 112. See also Report of Ohio School, 1895, pp. 102, 104 (6th reunion of former pupils).

³ Report of Illinois Board of Charities, 1904, p. 12. Complaint in this case arose mainly from the belief that the home cost annually \$475 *per capita*, while the inmates could be maintained on a strictly charitable basis for \$175. See also Message of Governor of Illinois, 1905, p. 40; *Cincinnati Globe*, Sept. 20, 1918.

⁴ Report of California Board of Charities and Corrections, 1910, p. 25. The State establishment in Illinois has been declared, “as an industrial institution,” to have been “a complete failure,” to have become “a State home for a privileged dependent class,”

the narrow range of occupations afforded, and in the want of strictly business-like management.¹

Yet notwithstanding the criticisms directed from time to time, and in one quarter and another, at the establishments, there has usually been for the great number of them general sanction and approval. Even where entire commendation of their conduct and results could not be given, there has rarely been withholding of sympathy for the purposes which have underlain the undertakings, and for the efforts which have been put forth to make them successful. When once the public has come to understand the difficulties under which the shops have to labor, its attitude is seldom one of disparagement, but generally one of cordial good will and support.²

and to be no better than a "State almshouse." *Illinois Institution Quarterly*, ix., 1918, 2, June, p. 83.

¹ Disapproval has also been voiced over the introduction of political influences—for in certain instances "politics" has been allowed to play a baneful part.

² See *ibid.*, ix., 1918, 4, Dec., p. 144; Report of Illinois Board of Charities, 1908, p. 72; Report of Wisconsin Board of Control, 1924, p. 43; 1926, p. 85; "Some Facts Regarding Michigan Employment Institution for Blind," 1906.

CHAPTER XLIV

ORGANIZATION AND RESULTS OF PRESENT INDUSTRIAL ESTABLISHMENTS

FORMS OF ESTABLISHMENTS

We find that there are at present in operation in the United States some seventy special industrial establishments for the blind.¹ They are situated chiefly in the East and the Middle West, being in the States of Maine, Massachusetts, Connecticut, New Hampshire, Rhode Island, New York, Pennsylvania, Delaware, Maryland, District of Columbia, Ohio, Indiana, Illinois, Kentucky, Alabama, Virginia, South Carolina, Georgia, Louisiana, Texas, Missouri, Tennessee, Michigan, Wisconsin, Minnesota, Kansas, Colorado, Utah, Washington, Oregon, and California.² In New York there are seventeen, in Pennsylvania ten, in Massachusetts and Missouri each eight, in Ohio six, in Minnesota four, in California, Illinois, Georgia, and Texas each three, and in Michigan, Kentucky, Virginia, Alabama, Louisiana, and Colorado each two. In Massachusetts, and in part in New York, Pennsylvania, and Missouri, the arrangement consists largely of a number of small centers, or of a chain of shops.³

All told, we have four forms of industrial establishments.⁴ The first is the simple industrial school, where the blind are given training in some trade or trades, though as a matter of fact the operations of such an establishment are likely to be extended to include greater or less provision for the actual employment of some of the learners. The second is the workshop as such, which is conducted as an ordinary shop or factory, the employees coming to it each day to work and returning to their own homes at the close. In such an establishment the blind are theoretically on the same industrial footing as regular factory operatives. The third form is best known as the industrial home, which, as its name indicates, contains a home for the blind to live in as well as a shop for them to work in. It is as a general thing organized primarily to furnish a home for the blind, to which are later

¹ There are possibly a few other small establishments in connection with the work of some organization for the blind.

² For table as to individual shops, see Appendix D.

³ In Virginia there is a system of small local training centers.

⁴ In New Hampshire and North Dakota provision may be made in establishments in other States.

added industrial features, though it may be that the twofold arrangement is introduced at the beginning.¹ The fourth form may be designated as the combination institution, embracing both an industrial home for those who live in the establishment, and a shop only for those who live out, that is, providing both a home and working place for the blind who live in, and a shop alone for day operatives. It is also partly the result of a home that has undertaken to serve other blind persons in the community who live outside, and partly the result of a movement to create a joint home and shop. In all a certain amount of training, or period of apprenticeship, may be included.

Among all these several forms of industrial establishments, the simple workshop is much the most common. Of the institutions which are training centers to a greater or less extent, leading examples are those in Connecticut, Maine, New York (in some of the smaller localities) Ohio (Columbus), and Virginia (Charlottesville), with a number of other shops having this feature in some measure. There are several instances of the industrial home: in California (Oakland), Colorado, Michigan (Saginaw), Minnesota (St. Paul), and Ohio (Clovernook).² The combination institution is found in the cities of New York (Industrial Home in Brooklyn), Chicago (Industrial Home), Philadelphia, Wilmington, and a few others. (In some establishments provision is made for the boarding of a certain number of employees, either within or near-by.) In a few instances shops are connected with what may be known as social centers for the blind, being perhaps one of several activities carried on by some organization for the blind.³ (Certain shops are called "lighthouses.")⁴ Shops without the home feature are growing much more rapidly than shops with it. Of later years the former may be said to have become the general plan.

¹ To these may be added certain schools which allow industrial training to a limited number of adult persons, especially during summer vacations, Minnesota in 1906 being the first. Sessions may last two or three months for men, and a shorter period for women. The number at any one time is usually a few score, perhaps less than a score. On this work, see Report of Minnesota School, 1906, p. 23; 1908, p. 14; 1910, p. 16; 1914, p. 14; Report of Minnesota Board of Control, 1906, p. 426; Report of Wisconsin Board of Control, 1926, p. 392; Proceedings of American Association of Workers for Blind, 1911, p. 26; Proceedings of American Association of Instructors of Blind, 1906, p. 3; *Colorado Index* (Colorado School), Jan., 1907; *Northwest Medicine*, xv., 1916, p. 87; *Outlook for Blind*, June, 1926, p. 38.

² The Clovernook institution (Cincinnati) is to be classed as both a home and an industrial establishment. There may be added some of the regular homes for the blind, especially those at Washington, Philadelphia (Industrial Home for Blind Women), New York City (Staten Island and Manhattan), Yonkers, Jersey City, Worcester, St. Louis, Nashville, and Des Moines. Such have enlarged their operations to give more or less remunerative employment to certain of their inmates. In a few cases day operatives are also admitted.

³ Especially in Massachusetts and New York.

⁴ In Kentucky there is a "farm" for the blind.

ADDITIONAL FUNCTIONS OF SHOPS

An increasing number of shops are having additional duties placed upon them or are engaging in service for the blind outside their immediate precincts or of a nature not altogether industrial. Such extra tasks may be with or without express authorization, possibly undertaken simply in recognition of an enlarged field of operations open to them. A not infrequent activity is home teaching or kindred work. Not a few shops are concerned with placing the blind in some general industrial establishment, setting them up in some business enterprise of their own in their own communities, providing them with tools or materials for local use, or marketing products of their manufacture. Certain ones maintain field officers for the purpose, or in the interests of greater efficiency. In some instances shops act as centers for the carrying on of home work (especially if there is no other existing agency therefor). Special salesrooms may be conducted, perhaps at a different locality. At times the teaching of raised print is expected or required in the shops.

In Indiana, Maine, Maryland, Michigan, Oregon, Washington, and Wisconsin the shops are directed by law to conduct circulating libraries, home teaching, or like work. In Maryland the shop has charge of the pensions for the blind of the State.¹

DIRECTION OF ESTABLISHMENTS

Establishments under private auspices predominate over those under public. Controlled directly by the state are the ones in California (Oakland and Los Angeles), Colorado, Illinois (Industrial Home), Indiana, Kansas, Kentucky (State shop), Maryland, Massachusetts (under State agency), Michigan, Missouri (under State agency), Ohio (Columbus), Oregon, South Carolina, Tennessee, Virginia (Charlottesville), and Wisconsin. The shops in the smaller cities of New York are under the joint operation of local associations and the State agency for the blind. (In Minnesota and Missouri State agencies are generally back of the shops.) The establishments in Connecticut and Maine, while nominally private, are really semi-public affairs in that they are largely subsidized by the State. Other establishments are also to a certain extent assisted by public funds: those in Delaware, Louisiana (Shreveport), and Pennsylvania by the State and city; in Maryland by the county and city; in New York (Industrial Home in Brooklyn) by the city; and in the District of

¹ In one or two States the granting of permanent support to any blind person is expressly forbidden.

Columbia by the Federal Government. (In New York State aid may come from counties, and in Connecticut from cities and towns.) The remaining shops are entirely private affairs, with their income derived solely from private sources.

The establishments are as a rule governed by special boards of trustees, the public ones usually having from three to seven members, and the private ones more. In the case of the former appointments are generally made by the Governor, often with the consent of the State senate.¹ In Illinois (Industrial Home), Michigan (Saginaw), Colorado, California (Oakland and Los Angeles), and Wisconsin direction is in the hands of central State bodies. The shops are in the hands of commissions or similar agencies for the blind in Massachusetts (except that under Perkins Institution), Delaware, Ohio (Columbus), Indiana, Missouri (one shop at St. Louis), Tennessee, and Oregon. In Connecticut, Kentucky (State shop), Kansas, and Utah the establishments are under the direction of or connected with schools for blind children. The shops in Pennsylvania (except that in Philadelphia) are conducted by the State association for the blind; and in Missouri (one in St. Louis), by a State organization of the blind. Two establishments in New York (Brooklyn) are under charitable societies. One in Chicago is an independent institution, having connection with no other organization. The remaining shops are in general conducted by local associations for the blind. The establishments of a public character are as a rule inspected by a State public welfare body, which is also the case with some of the private ones.²

Where public commissions or similar agencies for the blind have been created, a frequent task, required or permitted, is the establishment of workshops.³

MEANS OF SUPPORT OF ESTABLISHMENTS

The costs of the industrial establishments for the blind are met from two sources: the returns from the sales of articles, which are of a purely commercial character; and the receipts from sources not connected

¹ In Maryland 3 members are appointed by the Governor, and 2 selected by the State school. In Michigan the Governor is a member *ex-officio* of the board. In Maine members are variously appointed. In the shop in Brooklyn, New York, the board is self-perpetuating. It is often required that a certain number of the members live in the locality of the establishment. Sometimes a blind person is made a member, this being obligatory in a few instances. In several cases there are auxiliary boards of women. On the powers and duties of boards of directors, see *Tuck v. Board of Trustees of Industrial Home*, 106 Cal., 216, 39 Pac., 607 (1895); *Illinois Industrial Home v. Dreyer*, 150 Ill. App., 574 (1909); *Consolidated Coal Co. v. Board of Trustees of Michigan Employment Institution*, 164 Mich., 235, 129 N. W., 193 (1910). See also Journal of Illinois House of Representatives, 1903, p. 34.

² Some of the public shops have greater or less connection with other State agencies. In Oregon there is a special advisory board.

³ In California a central public agency is similarly authorized.

with their operations, which are largely of the nature of bounties. If the shops were self-supporting, they would have only the former means, or their "profits," to carry them on. But they do not in practice prove capable of standing by themselves. In addition to their earnings from the market, they must look to other sources for aid. The amount of such assistance required varies with the different establishments, some coming much nearer to an even balance than others. In some cases the losses incurred in the venture have been considerable, which is especially likely to be true where industrial homes are concerned, that is, where a home is provided for some of the blind as well as industrial facilities.

At present the total annual cost of the shops amounts to perhaps not less than three million dollars. Of this sum something over two million is derived from the proceeds of sales. There is thus left a deficit of not far from one million dollars, which has to be made up from "outside" sources. This may come either from public appropriations or from private contributions, or in certain cases from both. The amount of such aid to the several establishments ranges from a thousand or so dollars a year to some thousand dollars, sums of more than fifty thousand dollars being exceptional. The largest recipients are generally the establishments having homes in connection. The actual cost of the establishments, however, is increased by the sums that were employed at the beginning, especially in the purchase of a site and in the erection of buildings, which may be called the initial outlay.

The public institutions receive their funds for the most part in the form of State appropriations, which are usually from \$3,000 to \$80,000 a year, depending largely on the size of the plant, and also in part on the possible inclusion of a home department.¹ In a few cases there is also aid from the city. Of the amounts allowed to the special agencies for the blind, no small portion is devoted to the use of the shops. Most of the establishments subsidized by public funds receive grants only less than those received by the regular public shops. In case the grants are from both State and city, those from the former are usually considerably the larger. In Connecticut, Maryland, and Wisconsin the annual appropriations are upon a *per capita* basis. Private shops in a few States are subsidized by State commissions. In addition, there are grants from time to time for the betterment of the physical plant or equipment. In the case of certain public establishments there are occasional gifts from private sources.²

¹ In Oregon there is a one twenty-fifth mill tax for the shops (besides a one-sixth mill tax for purposes of construction).

² A number of the public establishments are given express permission to receive donations.

The amounts donated to private establishments, apart from those made at the start for the creation of a plant, are rarely large, unless the establishments happen to be a part of the general work of associations for the blind. With such exception, contributions probably do not much exceed three or four thousand dollars a year in any one case, or thirty of forty thousand dollars in the aggregate.¹ (In some cases shops are beneficiaries from community chests or similar funds.)

In addition to these appropriations and donations, we find the shops assisted indirectly in other ways. As a general thing they are absolved from the payment of any form of tax or license fee. Some are also relieved from the payment of charges for the rent of quarters, while heat, light, and other accessories are often furnished free. In Michigan, Massachusetts, and Indiana the "State use" system is employed, the several public institutions being required to purchase the products of the shop where needed at reasonable prices; and in the institutions of other States the wares of the blind are given preference to a greater or less extent.²

The value of all the plants employed in the industrial occupation of the blind is probably hardly less than three million dollars, no allowance being made for a certain number housed in rented property. The value of individual establishments ranges from a few thousand dollars for the smaller ones, to one hundred thousand dollars or even more for the larger. An institution with a home attached is likely to be a more costly one.

REGULATIONS AS TO ADMISSION INTO SHOPS

There are often more applicants for admission into the establishments than can be accommodated; and in a few cases there are waiting lists, with perhaps a considerable number of names. For this reason it is sometimes necessary that those who are to be allowed to enter be somewhat carefully chosen.³ On the other hand, not infrequently

¹ The establishments that have especially benefited from private contributions are those in New York (Brooklyn), Pennsylvania (Philadelphia), Connecticut, California, (San Francisco), Maryland, Maine, Indiana, Delaware, and District of Columbia, together with that of the New York Association in New York City. Often aid is secured through concerts and other entertainments, and occasionally through special efforts on the part of blind persons. Some of the establishments have endowment funds, especially those in Brooklyn, Philadelphia, Cleveland, Toledo, Grand Rapids, and Chicago. These may be of from \$50,000 to \$100,000, or even more. Sometimes land has been given for a site, usually by the city in which it was to be located, as in Indiana, Maine, and Michigan. In a few cases membership is open in the societies controlling the establishments on the payment of the prescribed fees (as in that in Philadelphia, with \$25 for life members, \$100 for benefactors, and \$500 for patrons).

² In a few cases material is grown to some extent on the farms at the several State institutions.

³ Sometimes pressure is exerted to secure the admittance of unfit persons.

efforts have to be made to seek out blind persons who might be benefited by the shops, or at least to find them all, so that as many as possible of those who are fitted and for whom there is room may be drawn in.¹ In certain States it is made the duty of local officials having to do with the poor to report the names of eligible blind persons.²

For the admission of inmates or workers into the shops there are few hard and fast rules laid down. Most are for men only, the remainder being for men and women or for women only. They are of course intended mainly for adults; and the matter of age is in general left to the discretion of the managers. In some instances a lower limit of eighteen is prescribed,³ and in others of twenty-one.⁴ There is usually no fixed period of residence, it being understood that this is chiefly conditioned upon the actual capacity for work. In a few cases a term is specified, as from eighteen to sixty, though limits of such kind are not rigidly adhered to.⁵ In establishments which are primarily for trade instruction, and in the training departments of other establishments, a certain number of years are allowed for the acquiring of a trade, as two, three, or five. In most cases it is required that the applicant for admission have been a citizen or resident of the State or of the city in which the shop is located for a minimum number of years.⁶ It is also often demanded that the applicant be of good moral character.⁷

The establishments are for the most part entirely free to those eligible to admission. In the case of the industrial homes there may be a formal requirement that payment be exacted of all inmates capable of rendering such, though in practice this regulation is seldom if ever

¹ One shop has been declared not to be "an asylum for the permanent free maintenance of aged or helpless blind persons, or a hospital or infirmary for the cure or treatment of blindness or other maladies." Report of Superintendent of Instruction of Michigan, 1909, p. 66. Sometimes the establishments are asserted not to be "blind men's hotels."

² In Michigan and Pennsylvania county officials may provide for the care of certain destitute blind persons at the shops.

³ As in Connecticut, Kentucky, Maine, and Maryland.

⁴ As in Alabama, Colorado, Indiana, and Pennsylvania (Philadelphia). In the last named case it is preferred that none be admitted over forty-five.

⁵ In Michigan the statutory age period is from eighteen to sixty, and above sixty when it appears advisable, and under eighteen at the instance of the State school. Of inmates in the establishment in Philadelphia 8.5 per cent are from twenty to thirty years of age; 16.1 per cent, from thirty to forty; 33.9 per cent, from forty to fifty; 30.5 per cent, from fifty to sixty; and 11.0 per cent, over sixty. In Oregon the respective percentages are 20.6, 10.3, 20.6, 25.0, and 23.5.

⁶ In California a previous residence of 1 year in the State is required, and in Colorado of 3. In some cases persons from other States are received when special provision is made for them.

⁷ Other qualifications are that the applicant be of "suitable physical and mental capacity," or of sound mind and body and free from disease. In one or two States in the South only the white blind are admitted. In a few cases there are separate departments for the colored.

strictly followed.¹ Where board is charged, whether nominally or actually, to those residing in the institutions, the rate is usually about \$3 or \$4 a week. With certain public institutions, moreover, clothing and transportation may be furnished without cost to those otherwise unable to provide them. Such charges are usually defrayed by the county from which the beneficiary comes, though they are sometimes assumed directly by the State.

NUMBER OF EMPLOYEES IN SHOPS

The number of employees varies in different shops. The largest have 150 or more, and the smallest 8 or 10, or even less, the average being about 35 or 40. In all the industrial establishments in the United States there are, according to the latest available statistics, not less than three thousand persons. The number in different shops fluctuates from time to time. On the whole the number in all the shops together has shown a steady, if slow, increase with the years.

Not all these blind persons, however, are to be regarded as real wage-earners. Nearly one-fifth are to be looked upon as merely apprentices, who are being put in the way of later remunerative employment. Of the regular wage-earners, not less than four-fifths are men.

If we consider 30,000 as the potential number of the blind for whom industrial provision may be made—disregarding those who might be afforded work outside special establishments—it appears that only a very limited portion of these are so provided for.

INDUSTRIES AFFORDED IN SHOPS

The occupations provided in the shops have been limited.² The chief ones that have been carried on have been the making of brooms, mattresses, brushes, mops, rugs, baskets, and hammocks, together with the caning of chairs.³ To a less extent have been offered such employments as leather work, woodworking, and the like.⁴ In shops in which women work weaving, knitting, fancy work, and similar occupations have

¹ In the home departments of such establishments it is sometimes expressly provided that the aged and infirm be admitted without cost; in certain other cases they may be provided for if there are sufficient accommodations. Now and then those not employed constitute as many as one-third of the total number of inmates.

² Notable work in the way of testing out of new industries for the blind has been that of the association and the commission for the blind in Massachusetts. In 1904 an experimental shop was opened to determine what trades could be provided other than the conventional ones. See reports of these bodies. See also Proceedings of American Association of Workers for Blind, 1905, p. 32.

³ Upholstering, repair of certain articles of clothing, preparation of curled hair, restringing of tennis rackets, etc. have sometimes been engaged in. Mats, feather dusters, hat frames, paper boxes, etc., have at times been made.

⁴ In certain establishments power machines have been introduced for particular operations.

been the principal ones given. Training in the shops may include piano tuning, stenography, domestic science, etc. The making of brooms and of mattresses (and to a less extent of brushes and mops) and the caning of chairs have been the industries most largely engaged in, and in some of the shops have been practically the sole ones followed. To such an extent have they been found among the blind that they may be called their standard industries. Broom making in particular has been an occupation peculiarly adapted for the blind, and so well is it established among them that it is often spoken of as the "blind man's trade." In certain establishments, however, particular industries have been engaged in more or less extensively, or a certain specialization has existed with respect to them.¹ Sometimes a leading article is displaced for another.

OUTPUT OF SHOPS

The output of the several shops depends in the main upon their magnitude, the output of some of them being quite large.² Brooms constitute the single article produced in the greatest quantities. The total number of brooms made in all the establishments in one year is not much under six million. Complete figures with respect to the number of chairs caned, mattresses renovated, and other articles manufactured would also be considerable. The products of certain of the shops have had rather wide sales. In more than one instance a considerable demand has been built up for some particular article.³

Receipts from the sale of articles likewise vary with the size of the establishments. They range from a few thousand dollars annually for the smaller ones to seventy-five or one hundred thousand dollars for the larger. In the aggregate, receipts probably, as we have had occasion to observe, amount to not less than two million dollars a year.

WAGES PAID IN SHOPS

The total amount paid in wages in one year to the blind in their industrial establishments is perhaps a little less than one million

¹ In Massachusetts much attention has been given to the making of particular kinds of rugs and mops; and in Wisconsin, to the making of willow ware (fibre furniture and baskets). In the District of Columbia ink printing (not including the setting of type) was carried on for a time. At the Cloverbrook (Cincinnati) establishment the chief occupation is the embossing of literature for the blind.

² In some of the public shops all products are considered to be public property. In certain ones any balance after the payment of wages and other expenses is used for the further development of the undertaking, this often being called a "revolving fund." See *Illinois Institution Quarterly*, ix., 1918, 3, Sept., p. 102.

³ See Report of California Industrial Home for Blind, 1888, p. 7; Report of Michigan Employment Institution for Blind, 1908, p. 42; Proceedings of American Association of Workers for Blind, 1907, p. 92; *Outlook for Blind*, ii., 1908, p. 14. See also reports of different establishments.

dollars. If the sales amount to two million dollars or more, it appears that about two-fifths of it thus passes to the blind in the form of wages. In some shops this proportion is higher, and in others lower. Some three-fifths of the receipts of the products goes for material, "overhead charges," administration, sighted help, etc. The item of sighted assistance is, strictly speaking, to be included in the wage account; but from the point of view of the blind, it may be classified either as administration charges or as part of the general running expenses. Such aid constitutes from 10 to 35 per cent of the working force, and may consume from one-fourth to nearly one-half of the full wage expense, compensation in this respect being determined by the regular market standards.

The wages paid to individual blind workers vary greatly, as we might expect. They depend mainly, within certain bounds which we have previously indicated, upon the capacity and energy of the employees. In some establishments a higher scale prevails than in others. In most cases pay is for piece work, in a few being for both piece and time work.¹

For men the wages range from two or three dollars a week to fifteen or eighteen dollars, though the latter figures are very exceptional.² Ordinary weekly wages seldom exceed nine or ten dollars, and usually do not average higher than six or seven. The wages of women are much lower than those of men, being generally not more than one-half or two-thirds as large as the latter. In establishments where the employees are inmates, board is sometimes included as part of the wages. If a special rate is made for board and lodging, this is always small, being as a rule, as we have seen, close to \$4 a week. For workers receiving very low wages there is employed in certain shops some form of a bonus or "augmentation" system, as previously described.³ In a few cases a flat minimum wage is established. This may range from \$4 to \$8 a week. A frequent aim is to pay employees all above the cost of materials. (Apprentices may be allowed only free board.)

ACTUAL COST OF ESTABLISHMENTS

As the last matter for our attention in connection with the industrial establishments for the blind, we may ascertain their actual or net

¹ In a few cases there is a formal requirement of an eight-hour day.

² In the Philadelphia establishment there has been a nominal maximum wage of \$12 a week.

³ On wages of the blind, see *Proceedings of American Association of Workers for Blind*, 1911, pp. 23, 89; *Report of Illinois Board of Charities*, 1908, p. 225; *Report of Indiana Board of Industrial Aid for Blind*, 1926; *World Today*, xvii., 1909, p. 943; *Outlook for Blind*, ii., 1908, p. 10; *Monthly Labor Review*, xxv., 1927, 3, Sept., p. 99. See also reports of shops, commissions for the blind, etc.

cost. In respect to them there is no profit or interest to be earned; and all the receipts above the direct cost of running them, together with the purchase of material, go into the hands of the blind workers.¹ This cost, however, is not to be computed from the receipts of sales alone, which, as we see, are a little over two million dollars annually. To it must be added the one million dollars or thereabouts which we have found to be rendered from outside funds, either as public grants or as private contributions. The total yearly expense of the shops is thus not under three million dollars. As the sales do not meet the full expense, the true "cost" of the establishments is the sum received from outside sources, namely, a sum close to one million dollars.²

If we compare the wages of the blind with the costs of the shops, we find that, roughly speaking, for every 90 cents earned by the blind the state or private benevolence has to pay one dollar; or, stated differently, that it costs one dollar to pay them a wage of 90 cents.³ If, further, we divide the total expenses of the establishments by the number of persons provided for in them, we have a little over one thousand dollars as the amount expended for each. As, however, approximately two-thirds of this is defrayed from the sale of products, the real *per capita* cost proves to be well over three hundred dollars.⁴

¹ In these estimates no account is taken of the amount invested in the property of the establishments, nor of free rent or other free accessories.

² This is sometimes known as the "working loss." If all the 30,000 blind persons whom we have found possibly capable of industrial employment were so provided for on the same terms as those now so engaged, the total cost would be something like ten billion dollars.

³ In some shops the ratios are reported to be 3 to 5, 2 to 3, 3 to 4, etc.

⁴ Actual costs of the shops are difficult to determine in consequence of different systems of bookkeeping, the allocation of overhead and other charges, etc.—apart from the factors already considered. Careful cost analyses of the operations of the shops are greatly needed.

CHAPTER XLV

POSSIBLE EMPLOYMENT FOR BLIND IN GENERAL OCCUPATIONS

INDUSTRIAL PROVISION FOR BLIND OUTSIDE OF SPECIAL ESTABLISHMENTS

We are now to consider the question of the employment of the blind in more general occupations, or outside of special establishments, first considering it in its theoretical aspects, and next the practical results of movements in this direction. Of the matter account of varying moment has been taken from time to time in the past, though it is probable that today more attention is being given to it than ever before. Indeed, with the possible effecting at some time of greater or less social and economic readjustments, perhaps to result in the better distribution and fuller utilization of all the available labor supply of the country, it may come about that there will be a use for the labor of the blind, or a need for their services, of a character not before known.

Work by the blind in the regular occupations of those who see, without the calling into requisition of special industrial establishments, is of course the one desirable and the ideal solution of their economic problems. So far as the arrangement may be found practicable, so far will there be obviated the need of such special institutions. The blind enter into the general industrial ranks of the community, with relatively little to set them off as a special class therein; and their lives are made to approach as nearly as possible the normal.

Industrial provision for the blind apart from special shops may be developed along three lines.¹ First, they may be put into general shops or factories alongside sighted operatives, perhaps with certain supervision. Second, they may be set up, perhaps with guidance and assistance, in a business or trade, or in a commercial undertaking. Third, they may be furnished with material in their homes, which may be made into articles and the finished product marketed, all under proper direction. Each of these three forms of employment will demand separate treatment.

¹ On different classes of the blind from an industrial standpoint, see Report of Massachusetts Commission for Blind, 1915, p. 15.

WORK FOR BLIND IN REGULAR FACTORIES OR SHOPS

Employment of the blind in regular factories or shops, when examined in its practical bearings, does not appear to have for the general mass of them an encouraging outlook.¹ Even with particular oversight, the number that may be thus engaged is likely to be very restricted. At the best only the very quick to think and to act, and in the vigor of life, could expect to have a chance, and these, as we have had more than one occasion to note, do not constitute a large part of the blind. For the great number the difficulties seem to be well-nigh insuperable. In most manual operations, as we have already commented, sight is such an essential factor as to make the worker without it in many processes all but powerless; while in an establishment with machinery and perhaps in conjunction with many sighted persons, all moving under a brisk and ordered system, his straits become extreme.² One aspect of the situation has thus been stated:

No matter what his mental equipment or skill of hand, the blind man cannot fill a position which demands watchfulness, discrimination, observation, or any other qualification dependent upon vision with its sense of form and color.³

Added trouble is met when it comes to the inspection of the work performed, with the discovery of possible flaws.⁴

Employers are usually found very skeptical with regard to the capabilities of the blind, and show much reluctance even in giving them a trial.⁵ There is fear that the work attempted by blind men will be a blunder, no matter how earnestly and carefully they try to do it. There is also apprehension lest injury may result to them in their tasks, for which responsibility will rest upon the employer. This is especially true of recent years with the development of workmen's compensation laws and of similar measures.⁶

¹ On the value of sight industry, see *Industrial Management*, lxiii., 1922, p. 111; *Safety Engineering*, xl., 1920, p. 195; lxii., 1931, p. 71; lxiii., 1932, p. 109; *Iron Trade Review*, lxx., 1922, p. 665; *Scientific Monthly*, xx., 1925, p. 278; Bulletin of National Association of Corporation Schools, no. 7, 1920, p. 496; *Archives of Ophthalmology*, xlv., 1915, p. 523.

² It has been sometimes thought that with the installation of special devices for the blind, their difficulties might be made less.

³ Bulletin of Massachusetts Commission for Blind, 1909, p. 16.

⁴ "The blind man is at a disadvantage working alone. Measuring and other processes which a man who can see does not need will take him a good deal of time, and still very often his work is not quite what is expected." *American Journal of Sociology*, viii., 1903, p. 690.

⁵ "Factories, almost without exception, are closed to blind or defective-sighted men and women." Report of Massachusetts Commission, 1915, p. 17.

⁶ There is sometimes even apprehension with respect to the employment of men with but one eye, this being largely due to a belief that one's fitness is thus impaired, and in small part to the fear that the remaining eye may be lost. The loss of a single eye does not, however, often appear to impair to any material extent one's earning power, though at

With many employers there is also a conviction that the blind are of necessity greatly lacking in the alacrity and celerity of movement to be expected of ordinary persons, perhaps merely plodding along in their work, and perhaps causing a slowing up generally of industrial operations—with productivity and output not inconsiderably reduced in consequence. The increasing use of machinery and of labor-saving devices in industry militates against them, and makes matters the worse for them.¹ If, moreover, there is a scarcity of jobs among industrial workers in general, or if there is increased competition among them, it is the blind who will early feel the effects, and whose opportunities will be correspondingly diminished.² Finally, it is to be remembered that with the blind in general industrial establishments a circumstance always to be reckoned with is their transportation back and forth. The feeling of many employers in the matter may be thus stated: "The blind as a class may be considered almost unemployable in industry; and special provision must be made to solve their economic needs."³

The general situation may be summed up in the following words:

Experience has proved . . . that several things seriously militate against a wide extension of this form of employment. In the first place, opportunities are comparatively few, and some of them have already been secured by competent blind persons through their own efforts. In the second place, while there are many well-disposed manufacturers, who would be perfectly willing to provide such opportunities for a few persons without sight, their very good will makes them shrink from assuming what seems to them a large risk of injury to blind individuals who might enter their establishments.⁴

It is not to be set down, however, that the field is entirely closed—so far as concerns those of the blind who are otherwise fitted, mentally and physically, and especially those who happen to have a remnant of times it is claimed that persons so affected are discriminated against. In Massachusetts it has been found that in four-fifths of the cases there was no decrease in such respect; and that in the cases where there was a decrease, this was from one-half to one-fourth of former earnings. Special Report of Massachusetts Board of Education Relative to Training of Injured Persons, 1917, p. 43. Of cases of injury to the eye in California, there was a decrease from former earnings in 21.0 per cent, an increase in 25.0 per cent, and no change in 54.0 per cent. In 73.0 per cent there was reemployment at the previous occupation. *Monthly Labor Review*, vii., 1918, 4, Oct., p. 62. See also C. B. Labatt, "Commentaries on Law of Master and Servant," 1913, § 1084.

¹ On the general effects upon the blind of shorter hours in industry, see Proceedings of American Association of Instructors of Blind, 1932, p. 726.

² Of 49,417 openings offered by employers in Pennsylvania for disabled men, as found in 1918 by the State department of labor and industry, there were only 2 for men deprived of sight in both eyes. There were 5618, or 11.1 per cent, for men with one eye. Bulletin no. 2, 1918, p. 45; *Annals of American Academy of Political and Social Science*, lxxx., 1918, p. 74. See also *Monthly Labor Bulletin*, vii., 1918, 3, Sept., p. 83; viii., 1919, 1, Jan., p. 86.

³ M. A. Leavitt, "Handicapped Wage-Earners," 1928, p. 12. On general objections to the placing out of the blind, see Report of Wisconsin Board of Control, 1920, p. 211. See also *Outlook for Blind*, March, 1929, p. 36.

⁴ Report of Massachusetts Commission for Blind, 1910, p. 21. See also *ibid.*, 1914, p. 15.

vision—and so far as concerns those who live in localities where work is carried on of the character under consideration. In certain industries, though of limited range, there may be operations capable of being done by the blind. The occupations that have been proposed as suitable have been of a rather considerable variety—though the greater number are not found able to stand the test of practical experiment. Those which seem to offer the most promise are certain operations calling for unskilled labor, and ones in general simple or capable of being simplified—and, furthermore, of such nature as not to demand eyesight for their successful performance. Some of the most important brought forward are the assembling of articles; the packing of boxes or containers; the wrapping, sealing, or labeling of boxes, bottles, or packages; the attending of automatic weighing or filling machines; the folding or cutting of paper, pasteboard, or other material in certain processes; the running of strings in certain processes; the bending of pins or wires in certain processes; the sticking of pins or pegs in certain processes; the smoothing or rough polishing or varnishing of certain surfaces; the pasting or otherwise affixing of one article to another; the carrying on of lacing operations; the tying of knots, splicing of rope, and like processes; the sorting of certain articles; the stacking of certain articles; the taping of certain articles; the stripping of tobacco and similar materials; and other similar operations—together with such occupations as the operation of certain machines (lathes, punching machines, polishing machines, grinding machines, drill presses, etc.); certain forms of bench work (as cutting, clamping, etc.), woodworking, bookbinding, certain forms of automobile mechanical work, vulcanizing, and various other occupations of greater or less like character.¹

A form of work for the blind deserving of special mention is in connection with the manufacture of certain parts of electrical appliances, in which sight may not be altogether necessary. Such work consists mainly in the insulation, or the wrapping with tape, of coils for armatures, to be used in motors and dynamos. Other possible operations include the assembling or adjusting of certain parts, and like tasks.²

¹ To make a complete enumeration of the occupations suggested for the blind would be a difficult matter. Notable investigations of possible work for them have been made by the Red Cross Institute for the blind in connection with the provisions of the National Government for persons blinded in war service, as well by certain associations, commissions, and other organizations for the blind. See publications of Red Cross Institute for Blind; O. M. Sullivan and K. D. Snortum, "Disabled Persons," 1926, p. 575; Cleveland Society for Blind, "The Blind in Cleveland," 1924; Report of Tennessee Commission for Blind, 1918, p. 13; Report of Minnesota School, 1930, p. 36; Report of Pennsylvania Commission for Blind, 1925, p. 40; *Survey*, xli., 1918, p. 397; *Electrical Review*, lxxii., 1918, p. 852; *Outlook for Blind*, xii., 1919, p. 96.

² In respect to such work it is said that its quality "is pronounced by official inspectors absolutely as good as that of sighted labor." Crocker-Wheeler Co., "Double Duty Finger Guild," 1918.

The feature of greatest encouragement here is that with the general growth and development of electrical industries, there may be an increasing place for the blind, perhaps eventually to be extended to other industries.

On the whole it may be regarded as an unfortunate condition that there has been so little of actual experience in respect to the employment of the blind in company with the seeing. With a larger and more general testing of their competence, there might be a material expansion of the openings available for them. There is small doubt that there is considerably more work capable of being done by them than is now believed. Not only is this the case, but it is probable that there are certain processes which, because of the deftness and sensitiveness of their fingers, are peculiarly fitted for them. It is also to be remembered that blind workers are as a rule very careful and painstaking in what they do.¹

In work by the blind in general industrial establishments there may be said to be two factors that will greatly contribute to their success. One is a sympathetic employer, who, while avoiding any manifestations of charity, is yet willing to give the extra attention, or to afford the helping hand, which they at times need. The other is, in the case of large establishments, and where practicable, the creation of a special department, with special quarters, for the blind, where there is less danger of their contact with machinery, where proper facilities may be provided for them, and where they may have needed supervision, including due inspection of their work.² In this there appears to be an approach to the special shop for the blind: the essential difference is that with the general establishment the blind play an integral and necessary part in the entire producing force in an undertaking conducted on purely commercial lines.

Wages of the blind in regular shops or factories are on the whole, or perhaps on the average, not to be expected to equal those of the seeing—though in general for the same kind of work they may.³ The labor of the former is, as we have seen, mostly of an unskilled kind, and in certain processes only limited speed is possible. Not infrequently there will be, as in the special shops, earnings to be regarded as insufficient for entire self-support, but only as contributing in that direction.

In respect to all work of this character there are full opportunities

¹ It is also claimed that since the blind cannot readily or easily change from job to job, the matter of a frequent labor turnover with respect to them is largely eliminated.

² The problem of going to and from work need not be regarded as particularly serious; in some cases they may live near.

³ The blind are not usually eligible for the higher positions, with the larger compensation.

for service on the part of commissions, associations, shops, or other agencies for the blind. They may not only be concerned in finding employment, but also in extending a general supervision, with the giving of appropriate aid and advice.

WORK FOR BLIND IN BUSINESS UNDERTAKINGS

In the carrying on of a small business or trade, or in employment in a subordinate position in a commercial or mercantile establishment, or in a professional calling, there may also be possibilities for a certain qualified portion of the blind—perhaps, because of the fewer difficulties to be contended against, a larger portion than in the preceding case. The most favorable prospects are for those who have lost their sight while engaged in an executive position in a business or in a profession, and who, because of their general equipment and ability in other respects, are able to continue thereat. Perhaps not a great number of the blind on the whole can be provided for industrially in this manner, but it seems distinctly possible for a not inconsiderable proportion to be.

In some cases it may be feasible to continue blind persons in the same employments in which they were at the time of their loss of sight, perhaps with a certain amount of aid and supervision. In other cases it may appear advisable to set them up in a trade in their own communities to meet a particular need, with the supplying of necessary capital or material, or tools or stock, possibly in the form of loans, the trade to be chosen for the purpose perhaps being one acquired at a school or workshop, or elsewhere.¹ For a portion a modest business affair, such as a store or newsstand, or perhaps some other similar industry, may be deemed to be practicable. For another portion market gardening, small farming, or poultry raising may be adopted.² In addition, there are several lines (especially in music) which may be said to be already established ones for the blind, and which may be extended on an even larger scale.³ In all such endeavors full account must be taken of the matter of local competition, of marketing facilities, and of like factors. In trade or in occupations of similar order perhaps the most important consideration of all in the majority of cases is that there be at hand a sighted member of one's family, in particular a wife, to be of general assistance, and who can supply the eyes which at times are not easily to be dispensed with.

In positions in general undertakings there may perhaps also be

¹ See Report of Indiana School, 1858, p. 20; 1860, p. 13; 1862, p. 41.

² Shoemaking and certain forms of woodworking have been especially suggested.

³ The increasing use of radio and of music-playing instruments will make more difficult the endeavors of the blind in music.

afforded employment. In salesmanship there may be possibilities now only partly realized.¹ (This may embrace business advertising and insurance of various kinds.) Such may also be true of general office-work, including office management, accounting, and bookkeeping. In stenography there may be considered to be a rather special field for the blind, which may perhaps be enlarged.² In telephone operating there may be similar opportunities.³ In time still other occupations may be found available.⁴

Success in enterprises of a business nature will depend in the largest measure upon the individual ability, business capacity, initiative, and protracted energy of the blind themselves.⁵ Yet general oversight and aid of one kind or another may well be extended to them, which may very appropriately be the function of a public commission or private association, or even of an industrial institution. As a form of the assistance which may be rendered, the following has been suggested:

The Commission is strongly of the opinion, after its nine years of experience, that there is a considerable body of blind men and women who can successfully compete in an industrial world arranged for those with sight, if they are given what might well be called a subsidy to help equalize their chances in competition. As has been proved by experience, such men and women have the qualifications to enable them to carry on selling in one form or another, provided they are helped with a guide or sighted person to assist in the book-keeping, or by other aids without which the blind person is so largely helpless.⁶

With respect to such undertakings as the keeping of newsstands, so well suited to the blind, it may even be hoped that licenses therefor may in some measure be restricted to the blind (and to other handicapped classes). Possibly favored positions for operations should be afforded; or fees should be reduced or waived.

A large opportunity is presented in the entire matter for the special business training of the blind, both to enable them to overcome the difficulties due to their condition, and to promote their general efficiency—a subject to which schools and other organizations for the blind are giving increased attention. Above all, it is necessary that there be a constant lookout for openings, and also that the public in general be acquainted with the capabilities of the blind.

¹ See *Outlook for Blind*, xi., 1918, p. 90.

² See *Survey*, xli., 1918, p. 507.

³ With the "light signal," however, telephone work becomes very difficult for the blind. See Report of Ohio Commission for Blind, 1912, p. 18; *Outlook for Blind*, x., 1916, p. 92.

⁴ Massage is an occupation, which because of their sensitive touch, has been particularly recommended for the blind.

⁵ See *North American Review*, xxxvii., 1833, p. 47.

⁶ Report of Massachusetts Commission for Blind, 1915, p. 18.

HOME WORK FOR BLIND

The last phase of industrial provision for the blind outside of special establishments is work to be done by them in their own homes. This is the simplest form, meaning as it does, not the bringing of the blind to their places of work, but the taking of the work directly to them. With the material and the necessary instruments carried into their habitations, with competent instruction afforded in the fabrication of marketable goods, and with adequate facilities for the disposal of the completed articles, there is no small field open to the blind. It is one the entire range of which cannot be fully known till after trial, and one which is capable of very considerable expansion. The work lends itself peculiarly to women, especially in the making of certain articles of sewing, both plain and fancy. For some men as well the manufacture of wares to a limited extent may be found possible.¹ In few cases are the financial returns from such efforts likely to prove large, but in a number they may be quite measurable.

In the execution of home work success will in large degree be proportioned to the individual capacity and energy of the blind. A special directing hand is at the same time required; and the task may well be included in the sphere of home teaching, or among the duties of a commission, association, or other agency, such undertaking to furnish the proper equipment, to provide instruction, and to attend to the marketing of the finished products. A great deal will also depend upon the education of the public in the matter.²

POSSIBLE SPECIAL PROVISION FOR INDUSTRIAL TRAINING AND RE-EMPLOYMENT OF PERSONS BLINDED IN INDUSTRY OR ELSEWHERE

Consideration of industrial provision for the blind is not ended with the examination of measures designed for persons already in a state of blindness. In a really comprehensive program, provision is to be made for the training and reëmployment of persons who are blinded in industrial processes, and perhaps also for persons of like age and industrial capacity whose blindness is occasioned otherwise. Such persons, being in the vigor of life and at the period of their greatest in-

¹ On a course in business training in connection with the work of the schools, see Proceedings of American Association of Workers for Blind, 1907, p. 11. See also Report of Indiana School, 1850, pp. 30, 34. On possible training to be afforded in special shops for the blind, see Report of California Department of Public Welfare, 1926, p. 144.

² "People will employ the blind if they are good workmen, and will purchase the products of their labor if what they make is useful and well-made; but it is absolutely necessary to solicit orders and to make a diligent search for positions for the blind. Not one-tenth of the orders secured . . . have been unsolicited. They have been the result of persistent solicitation and constant search." *Institution Quarterly* (Illinois), viii., 1917, 8, Dec., p. 106.

dustrial efficiency, present the choicest group among the sightless—though even with them the limitations imposed in any circumstances by the want of sight must be early and fully recognized. The matter is but partly realized in the United States, and its general introduction belongs mainly in the future; but with our present enlarging conceptions as to such questions, it may be hoped that before very many years general attention will be given to it.¹ An opening place for it will most appropriately be found in connection with the workingmen's compensation laws being so widely adopted, where not only will indemnity be assured for the loss of vision occurring in the course of employment, but all possible measures will be called into requisition both to train industrially in a suitable manner those so injured, and to place them in the occupations for which they may be prepared. In measures for vocational education or training provision is distinctly possible in the latter direction.² In the process all existing means for the industrial employment of the blind may be availed of—special shops, work in regular factories or in business, work in independent undertakings, and home work.³

¹ The action of the Federal Government with respect to persons blinded in military service may perhaps be regarded both as an incentive to and as the forerunner of action in respect to persons blinded in civilian callings, especially on the part of the several States.

² See Special Report of Massachusetts Board of Education Relative to Training of Injured Persons, 1917.

³ In connection with the retraining and possible return to industrial life of persons newly blinded is to be mentioned the importance of occupational therapy as a necessary part in the process of rehabilitation. Instruction is to be afforded of suitable character and range, as a means of adaptation to the new state as well as for possible later practical usefulness or vocational advantage. In the program to be adopted for individual cases there is to be a study of past experiences and of present capacity, aptitudes, and opportunities. If feasible, return is to be made to the former occupation, with necessary readjustments. Necessary special education and equipment may be furnished.

NOTE TO CHAPTER XLVI.—On work of the blind with the seeing in general, see L. T. Brown, "Stand Concessions," 1930; L. T. Brown, "Insurance Underwriting," 1928; Gordon Lathrop, "Professional Writing, Opportunities for Blind in Journalism and Allied Fields," 1933; F. M. Langworthy, "Slojd System of Manual Training," 1927; G. E. Barton, "Teaching Sick," 1919, p. 141; National Institute for Blind (England), "Gardening for Blind"; Ministry of Health (England), Advisory Committee on Welfare of Blind, Report on Employment of Blind, 1919; Quarterly Representing Minnesota Educational, Philanthropic, Penal, and Correctional Institutions, xxv., 1925, 3, Nov., p. 18; Illinois Institution Quarterly, viii., 1917, 4, Dec., p. 102; ix., 1918, 2, June, p. 56; Report of Massachusetts Department of Education, Division for Blind, 1921, p. 40; 1923, p. 7; 1925, p. 38; Report of San Francisco Association for Blind, 1918, p. 20; Proceedings of American Association of Instructors of Blind, 1914, p. 32; 1916, p. 103; 1928, p. 364; Proceedings of American Association of Workers for Blind, 1905, p. 32; 1907, p. 101; 1911, pp. 18, 21; 1927, pp. 48, 58, 63, 97; 1929, p. 120, and *passim*; Proceedings of World Conference on Work for Blind, 1931, p. 166; Report of Minnesota Commission for Blind, 1923, p. 82; Report of Ohio Commission for Blind, 1910, p. 4; Report of Ohio School, 1895, p. 109 (7th reunion of former pupils); Colorado School, 1912, p. 13; Pennsylvania Institution, 1916, p. 35; 1924, pp. 31, 98, 103; Report of Illinois Board of Charities, 1908, p. 20; *American Machinist*, lv., 1921, pp. 284, 1023; *Popular Mechanics*, xl., 1923, p. 370; *Industrial Education Magazine*, xxv., 1924, p. 245; *Gregg Writer*, xxxi., 1929, p. 205; *Piano Trade Review*, Jan., 1928, p. 14; *American Magazine*, June, 1924, p. 76; *School Life*, Dec., 1920, p. 9; *Vocational Sum-*

mary, iii., 1921, p. 151; *Country Gentleman*, Jan. 11, 1919, p. 8; May 14, 1921, p. 29; *Current Opinion*, lxxviii., 1920, p. 130; lxx., 1921, p. 739; lxxi., 1921, p. 117; *Technical World Magazine*, xx., 1913, p. 543; *Journal of Society of Arts*, xix., 1871, p. 126; *Colorado Index* (Colorado School), Dec., 1914; Jan., 1915; *Utah Eagle* (Utah School), May, 1914; *Poultry Tribune*, April, 1925; Jan., 1928; *Art and Progress*, iii., 1911, p. 418; *Contemporary Review*, cxli., 1932, p. 198; *Industrial Arts Magazine*, x., 1921, p. 354; *Iron Age*, cvii., 1920, p. 569; cix., 1922, p. 733; *Engineering*, cxii., 1922, p. 715; *Industrial Management*, lvii., 1919, p. 105; lx., 1920, p. 314; *National Safety News*, June, 1924, p. 39; *Touchstone*, iv., 1919, p. 330; *Good Health*, lviii., 1923, p. 532; *Trained Nurse and Hospital Review*, lxiv., 1920, p. 313; *Literary Digest*, Sept. 18, 1920, p. 27; *Charities and Commons*, xv., 1906, p. 634; *Survey*, xli., 1919, p. 507; *Teachers Forum*, May, 1930, and *passim*; *Outlook for Blind*, ii., 1908, p. 23; viii., 1915, p. 175; ix., 1915, p. 95; xi., 1917, p. 54; xvi., 1922, p. 101; Sept., 1923, p. 22; June, 1924, pp. 11, 19; Dec., 1924, p. 15; Sept., 1925, p. 45; March, 1926, p. 35; Sept., 1926, p. 38; Dec., 1926, pp. 40, 43; March, 1929, p. 36; June, 1929, p. 16; June, 1930, pp. 16, 20; xxvi., 1932, pp. 39, 139, 218; xxvii., 1933, p. 161.

On massage for the blind, see *Philadelphia Medical Journal*, i., 1898, p. 426; *American Medicine*, viii., 1904, p. 232; *Boston Medical and Surgical Journal*, clii., 1905, p. 485; *Ophthalmology*, iii., 1906, p. 23; vi., 1910, p. 191; *Talks, Tales, and Public Opinion*, Nov., 1906; *Technical World Magazine*, xix., 1913, p. 905; *Annals of American Academy of Political and Social Science*, lxxx., 1918, p. 111; *Outlook for Blind*, March, 1926, p. 38; June, 1926, p. 18; xxvii., 1933, p. 65; *Medical Record*, xciv., 1918, p. 709; Proceedings of American Association of Instructors of Blind, 1898, p. 19; Proceedings of World Conference on Work for Blind, 1931, p. 523; Transactions of American Academy of Ophthalmology and Oto-Laryngology, 1909, p. 291; L. T. Brown, "Osteopathy," 1928; Proceedings of International Conference on Blind (England), 1914, p. 314.

On electrical work for the blind, see *American Machinist*, xlvi., 1918, p. 290; *Electric World*, lxxi., 1918, pp. 114, 1255; *Modern Hospital*, x., 1918, p. 63; *Popular Mechanics*, xxvi., 1916, p. 426; *Electrical Review*, lxxi., 1917, p. 845; lxxii., 1918, pp. 852, 1071; *Sea Power*, vi., 1919, p. 44; *Literary Digest*, Nov. 10, 1917, p. 27; *Outlook for Blind*, xi., 1917, p. 66; xii., 1918, pp. 29, 89; xiii., 1919, p. 13; *Institution Quarterly* (Illinois), ix., 1918, 1, March, p. 120; *Finger Industry News* and other publications of Double Duty Finger Guild (Crocker-Wheeler Co.); Proceedings of New Jersey Conference of Charities and Correction, 1918, p. 154.

On home work for the blind, see Ohio Bulletin of Charities and Correction, xvii., 1911, 4, Dec., p. 35; Report of Ohio Department of Public Welfare, 1926, p. 49; Proceedings of Iowa Conference of Social Work, 1925, p. 107; Report of Ohio Commission for Blind, 1912, pp. 12, 20; Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 58; Proceedings of American Association of Workers for Blind, 1925, pp. 14, 28; Proceedings of World Conference on Work for Blind, 1931, p. 114; Report of Pennsylvania Institution, 1913, p. 22; *Welfare Magazine* (Illinois), Aug., 1926, p. 63; *Outlook for Blind*, xi., 1917, p. 59; March, 1923, p. 15.

CHAPTER XLVI

PRESENT EXTENT OF EMPLOYMENT OF BLIND IN GENERAL OCCUPATIONS

PROPORTION OF BLIND IN GENERAL INDUSTRIAL ESTABLISHMENTS

After consideration of the theoretical aspects of work for the blind in the general occupations of the seeing, we are to ascertain in what measure this has had practical realization. Perhaps the fullest answer to our inquiry in the matter is to be found in an earlier chapter on the general economic condition of the blind, where there have been shown the forms of occupation engaged in by them and the financial status of those so engaged.¹ With respect to their employment in regular shops or factories, it appears that here and there, in one place and another, it has proved feasible for certain blind persons to take up industrial work with the sighted, though the extent of this has been most limited, and has affected but a very small number.² Of the operations that have been proposed as suitable for the blind, only a slight proportion have received practical application to any appreciable degree.³

Where employment of the blind has been secured in general industrial establishments, it has sometimes been through their own efforts and sometimes through the efforts of others. Nearly all the organizations interested in the blind, whether to be regarded as formal employment agencies or not, including commissions, associations, shops, or schools,⁴ are constantly on the lookout for openings, and are often assiduous in their endeavors to place whatever ones they can.⁵

PROPORTION IN BUSINESS UNDERTAKINGS

The establishment of the blind in some small business or trade, or in a position of a commercial nature, or in a profession, so far as it has

¹ See Chapter XVII.

² Certain blind persons have been accepted for a longer or shorter period in establishments engaged in the making of tags, cash registers, sewing machines, etc.

³ In work in establishments manufacturing electrical appliances, a beginning has been made. At Ampere, New Jersey, in 1917 a special department for the blind was created, with two or three score given employment. Similar work has been undertaken in several other places.

⁴ Some schools make particular exertions to find employment for former pupils, as well as for other blind persons.

⁵ In a few cases blind persons in general establishments have been paid by some agency the difference between what is actually earned and what is regarded as a minimum wage. On the cost of placement, see Report of New York Commission for Blind, 1931, p. 14.

been accomplished, is most often the result of their own initiative and exertions, with certain assistance as a general thing from their families or friends. In some instances they are thus provided for under the direction of some special agency for the blind, with perhaps the furnishing of tools, the loan of capital, or the extension of other aid.¹ (At times special preliminary training is afforded.)

In our previous examination of the economic condition of the blind, we have seen that though they are found in a variety of callings of this character, they are for the most part but thinly distributed among them; and we have assumed that in many cases these callings were the ones followed at the time of the oncoming of blindness. In those lines which have been regarded as particularly suited for the blind, they are, except in respect to music and a few other vocations, scarcely more extensively represented.² It is to be added, however, that into certain occupations, such as stenography and certain forms of salesmanship, they are having rather an increasing introduction.

A particular trade that has proved relatively encouraging for some of the blind is the conducting of small stores, or of booths or stands or vending machines in public places for the sale of certain articles, whether of general or specialized character, especially candy, tobacco, soft drinks, etc. For individual success much has depended upon the immediate demand for the articles in question, and upon the location of the place of sale, apart from the personal qualities of the vendor. Best results have been obtained when they have been placed along lanes of traffic, or in locations frequented by the traveling public, as passenger terminals, public squares, gas stations, or in large office buildings, or near factories, etc.³ In some instances a special organization for the blind is in touch with the situation, or perhaps has general control over it. In a few communities special favors may be extended the blind, as in the remitting or reduction of license fees or in the providing of preferred positions.

¹ In several States tools may be lent by the special agencies for the blind. In Connecticut on the departure of blind persons from the industrial school, they may be allowed each the sum of \$200 for the purpose of providing themselves with tools. Laws, 1903, ch. 62. In Mississippi tools may be furnished by the State school to its graduates to the value of \$100. Laws, 1910, ch. 131; Ann. Code, 1927, § 6601. By the New York State School tools may be furnished to the value of \$75. Laws, 1867, ch. 744; 1873, ch. 463. The counties may be required to reimburse the school for the amount. The Pennsylvania Institution once allowed to its graduates \$80, then \$40, then \$20, and finally nothing. Similar assistance has been rendered in a few other States.

² In large cities where there are schools for the blind, especially Boston, New York, Philadelphia, and Pittsburgh, the pianos in a number of the public schools have been tuned by their pupils or graduates.

³ Often stands are of very simple order, consisting of little more than a box or counter. See L. T. Brown, "Stand Concessions," 1930; *Outlook for Blind*, Sept., 1927, p. 24; xxv., 1931, p. 149.

PROPORTION ENGAGED IN HOME WORK

The possibilities of work by the blind in their immediate homes have assumed within late years a very considerable importance, which may in large part be ascribed to the development of home teaching. It is being increasingly felt that there is perhaps a really wide field here, and one which is especially adapted for blind women. The agencies now taking up the work embrace to a greater or less extent nearly all of those laboring in behalf of the blind. As one of the tasks of home teaching it is considered to be peculiarly appropriate. From not a few associations for the blind it is receiving particular attention. Among the duties of commissions it is being given a prominent and definite place. In it a few schools are also enlisted.¹ With it an increasing number of shops are having concern. The undertaking has in fact assumed such a character that efforts are at present being made to organize it along systematic lines, and, as far as possible, to put it on an actual business basis.

The work as now constituted includes the distribution of material, the providing of instruction in its preparation, and the collecting and marketing of the finished products. The last named feature is attended to by practically all agencies for the blind.² To dispose of the goods, early procedure has often been the offering of them for sale at places generally frequented by the public, especially at hotels and summer resorts. In time displays have been held elsewhere also. Today in certain centers of population there are maintained permanent salesrooms; while in various smaller localities there are conducted what may be called moving exhibits or exchanges, with a longer or shorter stay at each place, especially in Massachusetts, Ohio, New York, and Pennsylvania. The latest development is the creation of a system of special agents to take orders for goods. Of particular benefit at all stages has been the coöperation of certain department stores in large cities, and of other stores in smaller places, which, without charge, furnish space for the wares of the blind and make collections for them. Favors of other kinds are also frequently extended, not the least of which has been the aid rendered by women's clubs. In some cities there are special "weeks for the blind," when their products are on public sale, largely promoted by churches, civic bodies, etc., with the coöperation of agencies for the blind.

According to the usual plan, the workers are paid the difference

¹ Special salesrooms are conducted by the Pennsylvania Institution, the Perkins Institution, and the Maryland School.

² In the case of several of the associations for the blind, class instruction is afforded.

between the cost of material and the selling price of the completed article, all costs for instruction, shipment, etc. being provided. The net compensation received by individual blind persons rarely amounts to as much as two dollars per week, often being much less. The articles made are of various kinds, though mainly some form of needle work, usually including both plain and fancy work (especially towels and aprons), together with rugs, baskets, knitted work, stuffed toys, leather work, etc. While women constitute much the larger number of those benefited, the undertaking has in many places been expanded to include men, their labor being principally the making of brooms, rugs, baskets, and other articles. The proportion of adult blind persons at present affected by home work in particular states ranges from less than 10 per cent to one-third or even more. In certain States the work has increased considerably within recent years.

SPECIAL INDUSTRIAL PROVISION FOR PERSONS BLINDED IN INDUSTRY OR ELSEWHERE

Special provision for the training and reemployment of persons in consequence of their having become blind while engaged in industrial operations or in other circumstances has on the whole had but limited development in the United States. Most of the States have provisions for industrial rehabilitation or vocational training for persons who have become disabled in the course of their work, as a rule in connection with the provisions of the Federal Government which allow financial assistance. This work may be in the hands of the State department of labor (or similar body) or of the State department of education, possibly under some joint arrangement between the two. In some of the States the blind are not expressly included under the provisions of the law, though by implication they could be embraced in all. In most States where the blind are accepted for aid, a very liberal policy is adopted, perhaps extending to persons who have become blind under any circumstances (including those born blind).¹ Facilities for education or training may extend to the giving of professional instruction. In some instances blind persons to be aided are turned over to some already existing agency for the blind, perhaps an industrial establishment—though on the whole not a great number are thus provided for. (In some instances no assistance may be afforded to a blind person in the hands of a private agency.) Not infrequently efforts are made to set up a blind person in an independent business or to place such a one in some general industrial establishment, following upon greater or less specialized training. Where the blind are taught trades, these are

¹ On provisions for persons blinded in war, see Chapter LIV.

the usual or customary ones for the blind. The work is much further advanced in some States than in others.¹

¹ In touch with the Federal Board for Vocational Education there are 116 blind persons (1928). These perhaps represent a little under one-tenth of all persons receiving special vocational training. The proportion having institutional training is 73.3 per cent; having employment training, 18.4 per cent; having placement, 2.5 per cent; having establishment in business, 2.5 per cent; and unknown, 3.3 per cent. Of the total number 70.8 per cent are males, and 29.2 per cent females. Under twenty-one are 20.0 per cent; from twenty-one to thirty, 35.8 per cent; from thirty-one to forty, 20.8 per cent; from forty-one to fifty, 12.5 per cent; and fifty or over, 9.2 per cent. See publications of Federal Board for Vocational Rehabilitation. In Pennsylvania the percentage is 8.4 (16 blind persons). See Report of Pennsylvania Commission for Blind, 1925, pp. 37, 79; Report of Pennsylvania Department of Labor and Industry, Sept., 1924; *Monthly Labor Review*, xix., 1924, 5, Nov., p. 255.

CHAPTER XLVII

PENSIONS FOR BLIND: THEORETICAL CONSIDERATIONS

THEORETICAL ASPECTS OF PENSIONS FOR BLIND

With the economic condition of the blind as it is, and with the means so far offered to it likely to affect only a part of them, we are now obliged to inquire whether some other recourse may not be availed of to meet the needs of the considerable number still requiring aid. A single resort seems now to lie before us. Is it not possible that some arrangement may be effected whereby a certain public allowance may be made to the blind to relieve their material wants, which will not interfere with their home connections or with their regular order of living? In other words, is it not possible for some sort of pension system to be devised, which can in some measure answer to their needs?

This is the issue with which we are now brought face to face. The matter, however, is of far larger significance than would be indicated by the lines of approach which we have made to it. It is, in reality, the one great, overshadowing theme in all work for the blind that has to do with their economic condition. Through all discussion of this condition the pension plan looms up as the ultimate question. To whatever extent contribution may by other measures be made to the general solution of the problem, in respect to a greater or less number the question of pensions is sooner or later to be found waiting.

At a later stage we are to consider the offer of indemnities in different forms for the loss of sight, which may be regarded as affording the really desirable solution of the problem. Yet such, to whatever extent to be accepted, belong mainly to the future. To the blind of the present they can have but little relation: for these a program more immediate in its bearings is demanded.

For the most part hitherto in the United States any form of pensions other than those to war veterans has been looked upon askance. It is only within comparatively recent years that serious attention has been given to the extension of the principle of public pensions, or grants, as they may equally well, if not better, be called, to other classes of the population, as to industrial workers who have become incapacitated for labor, or to widowed mothers with young children. In these cases, as with pensions to war veterans, the award is based upon

services, past or present, for the performance of which the state can feel that it owes a real and distinct debt. Upon a different basis from these will have to rest pensions for the blind. Here the question of reward for past service or recompense for present service scarcely enters into the situation. The aid is extended simply as a means of relief, considered to be best adapted to meet the needs of an incapacitated portion of the population.

Before proceeding further, however, in the consideration of a pension system for the blind, it is necessary that examination be made of the arguments against it. These arguments are several, all of a very serious nature. In the first place, any comprehensive scheme of pensions for the blind will require a very considerable outlay of money from the public treasury, that is, from the tax-paying community. If one-half of the blind persons of the country in adult life should be given pensions at the rate of \$300 a year—this being the maximum sum allowed in the majority of States with pension systems—there would be annually expended for pensions for the blind in the United States a sum close to thirteen million dollars. It is extremely difficult, moreover, to determine just what is “adequate” relief for the blind; or upon what a proper standard of living for the blind is to be based; or to what extent any monetary compensation may be regarded as an offset to blindness.

Through pension plans economic sore spots may often not really be reached. General tendencies of the practice may be other than desirable. Into the best devised arrangements abuses and trickery may creep. The effect upon the character of the beneficiary may be far from wholesome. The incentive to rely upon oneself and to make determined efforts to find some kind of employment is largely removed; and there may result inertness and indolence, coupled with a complacent sense of security in being provided for at all events.¹

In not a few cases the family may consider itself relieved of its duty, and may not make the effort to assist as it otherwise might. In other instances the situation may be of general family want, which requires consideration as a whole. Furthermore, it may be remarked that some of the blind would not be in need of pensions if proper attention and provision had been accorded them at an earlier period. It is likewise to be remembered that if there were offered a general old age pension system, many of the blind would be included in it, blindness being, as we have had occasion often to point out, in great measure an affection

¹ A consideration also worth mentioning is how far the blind may be expected to expend wisely the relief afforded them. At times it may even be possible for wrong hands to get possession of the money.

of old age. Blind persons with other ailments or infirmities than blindness might also to some extent at least receive treatment based on such condition. Such cases may often be of complex nature; blindness may at times be only a contributory, though possibly the chief, factor in the entire situation.

In the giving of pensions to the blind there are involved both the justice and the practicability of extending relief of this nature to one handicapped class and not to others. If pensions are to be afforded to the blind, why should they not be to other incapacitated persons? And if to such, why not to the infirm of society generally? Where shall the line be drawn, or where shall we stop once we have started? Some large questions are found to be opened up, the logic of which cannot be denied. They will have to be frankly faced; and it would be difficult, even if it were wise, to escape from the full implications of the situation.

The arguments for the pension, on the other hand, are not without very great weight, possessing in fact peculiar force. The most powerful ones center about the circumstance that for some of the blind there appears little else to be done. A large portion have been found unable to earn a living for themselves, and must be provided for in some way. The different remedies offered to relieve the situation, whether special homes or industrial establishments, constituting in themselves no inconsiderable financial drain, can affect but a limited number. Thus the case for the pension plan, negative though it be, and despite all the arguments to be advanced against it, lies ultimately in the fact that for a certain part of the blind it remains the one recourse.

Yet to some of the objections brought forward a word may be said in answer. Under a carefully devised and executed system, many of the abuses, including perhaps the possibly deleterious effect on the recipient, may be minimized if not eliminated. As to the difficulties that are likely to be met with in singling out one handicapped class for favor, it may suffice to say that, while the seriousness of the problem is to be recognized, it should not be allowed to confuse the situation as to the blind or to militate against their evident needs. If it is found that others are entitled to similar relief, and that a pension system on a larger scale is the logical result, the matter should be decided on its merits, without prejudice to the wants of the blind.

Nor are the arguments for the pension system altogether of a refutatory character. The proposal has also certain positive advantages. It is the simplest, the most direct, and probably the most economical of all the measures available for giving necessary assistance to the blind. The principle of elasticity may be introduced, allowing greater amounts of money for the more needy cases, and smaller amounts for the less

needy. The beneficiaries are afforded a certain hope, and an assurance of care and protection, adding much to their comfort and joy in life.¹ Even though the financial outlay may appear to be large, under a careful system the pension is only to be extended in place of all other relief, including the profits of mendicancy, which lightens measurably the burden upon other sources. A particular gain, and one rather of reflex character, lies in the circumstance that, with the matter brought directly to the attention of the tax-payers, there will be increased interest in the possibilities of the prevention of blindness.²

OPINIONS OF PENSION SYSTEM AS BASED UPON EXPERIENCE

When the question of pensions is shifted from theoretical considerations to the ground of experimental knowledge, the argument for them appears on the whole to acquire new strength. Despite the fact that there have been some workers for the blind who have opposed the granting of the pension, it seems to be that by most of those who have been concerned with them in various relations, and who have sought in all possible ways to solve their economic problems, some form of relief, whether called pensions or not, is being viewed with more and more favor, or is being accepted as the last resort.

In the State of Ohio, with the largest actual experience in the pension plan, opinions have varied as to the results achieved. On the one hand, there has been emphatic commendation, it being declared that the pension is "of inestimable benefit to a large dependent class,"³ that it has "relieved the immediate and pressing needs of fully two-thirds of all the blind in the State,"⁴ and that the law, "imperfect though it is," "is a real and appreciated benefit to many needy blind of the State."⁵ As to the apprehension that "the giving of relief would decrease the ambition of the blind to be independent," the State commission for the blind "cannot express too strongly from actual observation its conviction that this is not universally or even generally the case."⁶ On the other hand, complaint has been raised, especially in regard to the more or less indiscriminate giving of the pension, it being stated that—

¹ It is sometimes claimed also that the receipt of a pension makes a blind member more welcome in his family. An argument occasionally advanced by the blind themselves is that inasmuch as the state furnishes free parks, museums, etc. to the general public, which they are unable to enjoy, they are entitled to some compensatory benefit.

² See Proceedings of National Conference of Charities and Correction, 1918, p. 269.

³ *Ohio State Medical Journal*, v., 1909, p. 472; *Ohio Bulletin of Charities and Correction*, xv., 1909, 1, Feb., p. 36.

⁴ Proceedings of American Association of Workers for Blind, 1911, p. 91.

⁵ Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 72.

⁶ Report, 1912, p. 28. See also Louis Stricker, "Blindness in Hamilton County," 1918.

It is a deplorable fact that at least 50 per cent of the recipients of the blind relief would never have thought of applying for public charity had it not been for the loosely drawn and more loosely administered blind relief law.¹

In other States disapproval is made as to certain undesirable effects of the pension. In Kansas it is said that "some of the blind are afraid to engage in industrial pursuits for fear that the pension may be withdrawn."² In Wisconsin it is declared:

The pension law now in operation is not an entire success. The difficulty lies in the fact that the administration is left with local county officers, and it is used somewhat for political purposes; that is, the county officer is very apt not to turn down applicants for fear of the political effect. As a consequence, there are quite a number getting pensions who do not deserve them, and who have no right to them.³

The State board of control of this State has had the following to say regarding the pension at one time:

It was in general done without system. There was but little investigation made. . . . The system is unfair to the State and unfair to the blind. We have discovered cases where money was paid to people who had sufficient income to live without aid. We have found other cases where money was paid to blind persons and used by relatives.⁴

In not a few instances attention is called to what is regarded as demoralization of the blind in consequence of the receipt of the pension, or to their reduced willingness to work further for a living. With some systems begging is reported as having been but little diminished.⁵ Evils are declared to be most pronounced with the "flat" pension rate. Special complaints have arisen because of the lack of acquaintance on the part of public officials with relief work in general, or with the special problems of the blind (there often being but a small number of blind persons in a given jurisdiction); and because of the absence of safeguards against imposture and subterfuge. Often the pension list of the blind has little reëxamination.

General effects of the pension system for the blind have thus been stated:

¹ Report of Supervisor of Administration Relative to Advisability of Providing Pensions for Needy Blind, Massachusetts, 1917, Senate no. 326 (statement from Ohio).

² From advices to writer.

³ *Ibid.*

⁴ Report, 1924, p. 64.

⁵ One of the conclusions of the commission for the blind of the State of New York, is that it is "in a large number of instances not only an unwise method, but is demoralizing in its effects upon the recipient." Report, 1904, p. 48. On the results of the pension system, see in particular R. B. Irwin and M. B. Irwin, "Blind Relief Laws and Their Administration" (Red Cross Institute for Blind), 1920; R. B. Irwin and E. C. McKay, "Blind Relief Laws, Their Theory and Practice," 1929.

The general public, and the State and county officials as well as the blind themselves, are usually in favor of some form of special blind relief legislation. Workers for the blind, however, are seldom enthusiastic regarding the blind relief law of their State, and most social workers are outspoken in disapproval of their local law, and skeptical as to the advisability of any special relief law. In many States the original blind relief legislation was obtained only after a more or less bitter fight in which the educators of the blind and some of the workers for the blind were tacitly or actively lined up with those opposing the relief provision. These old controversies left their scars, which in some cases have not yet disappeared.

In many of the States blind relief laws are badly administered. In nearly every State the blind population is dissatisfied with the operation of the local relief law. Accusations of injustice and niggardliness are quite prevalent; while, on the other hand, social workers in some places complain of the prodigality and loose methods with which these funds are dispensed. The administration, however, is about what the community demands. The good-natured American public has generally given hearty approval to the enactment of laws which will grant the blind a monetary relief. Just what this money shall relieve is not very clear. Sometimes it is poverty, and sometimes in the minds of the laymen the payment is regarded as compensation for loss of sight; but the same people who have cheerfully approved a blind relief law frequently complain vociferously of extravagance in public office, and as an abstract proposition support the official who can make a showing of economy.¹

Yet with all the undesirable features found to attach to the pension system, the conviction has steadily gained ground among those having to do with the blind that after all, or sooner or later, it will have to be adopted to a greater or less extent in most communities.

As an instance of what may be styled this changing attitude, we may call attention to the experience of the Massachusetts Commission for the Blind. Upon its creation in 1904 and after its first investigation, we find it taking a stand in opposition to the plan.

From such evidence as we have been able to gather concerning the pension schemes, we are led to believe that they represent a mistaken and undesirable policy.²

After five years of direct dealing with the problems of the blind, and after consideration of all the possibilities of the situation, a more favorable view is taken of the project, so far as it may apply to such of the blind as are "incapacitated," though without the indorsing of it as a whole.

Whether this type of need should be met by more highly organized private philanthropy, by homes partly or wholly supported by the state,

¹ *Ibid.*, p. 12.

² Report, 1904, p. 8.

or by a carefully guarded pension system, this Commission is not prepared to determine.¹

A year later we note a further advance, in that for certain of the blind the pension scheme is held out as the only remedy.

We come more and more clearly to the conclusion that a pension system, properly safeguarded, and possible for use by a blind person at home, or in the form of an admission fee to either a home for the blind or a home for the seeing, is probably the only adequate solution of the problems of the aged and infirm blind. Until some such measures are extended, little more than is already being done by charitable bodies or individuals can be accomplished for the aged and infirm deprived of sight.²

In the next few years, however, while the need of a pension for such persons is still pointed out, the appeal is to private philanthropy to provide it, and not the state.³ The Commission, in 1915, deprecating action by the latter, asserts that the most perplexing cases—

Do not present any such difficulties or any such cost as grow out of the administration of a general pension system. . . . The Commission is, and always has been, opposed to a general pension system for those deprived of sight.⁴

In 1917 it favored the enactment of a law providing "special outdoor aid to blind individuals or families in which there are one or more blind persons," through the administration of existing agencies.⁵ In 1919 the Commission believed "the pension form of relief" to be, "on the score of economy, inadvisable;" but it advised a fund to aid the blind most in need, "without discouraging their desire to work for a living."⁶

The feeling in Ohio has thus been stated:

But that some State relief which will enable them to stay among their own people, and not be forced into institutions except when their other infirmities would make it seem best, is desirable and necessary, all who have known the poor blind must agree.⁷

Not dissimilar are the views which have been expressed by the Commission to Investigate the Condition of the Blind in Pennsylvania:

¹ *Ibid.*, 1909, p. 17.

² *Ibid.*, 1910, p. 12.

³ *Ibid.*, 1911, p. 16; 1912, p. 12; 1913, p. 71; 1914, p. 18.

⁴ *Ibid.*, 1915, p. 15. It is also stated that the thing "most difficult of all" is "how to take care of those aged and wholly incapacitated blind, or those blind persons with other handicaps, such as that of feeble-mindedness, for whom there can be little but some form of straight relief." *Ibid.*, p. 14.

⁵ Statement I, Pensions or Relief, 1917.

⁶ Report, 1919, p. 54; *Outlook for Blind*, xiii., 1920, p. 114.

⁷ *Ibid.*, ix., 1915, p. 82. See also *ibid.*, ii., 1908, p. 108; Reports of Ten-Year Survey Committee of Massachusetts Commission for Blind, 1916, pp. 4, 19, 31.

There is, however, need for an immediate beginning of a conservative program to make available comparatively small amounts to aid the blind person and his family, struggling heroically against the fearful odds which blindness, ill health, and poverty impose.¹

The American Association of Workers for the Blind in 1925 went "on record as favoring an adequate and uniform pension or relief for the blind in all the States of the Union."²

It may be said in summary that with those in general concerned with the interests of the blind the real question is now, not whether pensions are desirable or not, but because of their being the eventual recourse, the formulation of a policy that will be at once helpful and effective.

DESIRABLE PENSION SYSTEM FOR BLIND

Laws authorizing pensions for the blind should be so drawn and so administered as to work benefit and not injury to the blind, and such as not to be inimical to the interests of the state or of the public. Relief should reach all, and only those, who are entitled to it. Unworthy persons should be strictly excluded, looseness of any kind not being tolerated. There should be investigation of all applicants, conducted on scientific principles, and the administration should be of a thoroughly disinterested character. Grants should be made according to individual needs, each case being decided for itself, with the avoidance of any flat-rate scheme.³ Consideration is to be given to the family as a unit, with relief based upon its general condition, while at the same time relatives are not to be allowed to escape their full responsibility in the matter. Care, furthermore, is to be exercised so as not to impair the morale of persons able to do work. In some instances the pension may be held out, not as complete relief, but as a nucleus to assist in the gaining of a livelihood. The aim of the pension should be to afford a sum somewhat above a mere subsistence level and in the direction of a comfort level (not a little depending on general community standards), while at the same time not discouraging industrial ambitions or the desire to contribute to self-support.

The amount of the grants should, if possible, not be so large, on the one hand, as to constitute a serious financial drain to the state, nor, on

¹ Report, 1925, p. 49. See also Report of Minnesota Commission for Blind, 1923, pp. 35, 89.

² Proceedings, p. 218. In 1917 a special committee had been created to draft a model bill. See *Outlook for Blind*, xi., 1917, p. 20.

³ "A flat-rate basis of aiding the blind is indefensible. The amounts given to certain individuals would be in excess of their needs; and to others so small in the face of their wants that to establish such a system, having knowledge of its limitations, would be folly." Report of Supervisor of Administration Relative to Advisability of Providing Pensions for Needy Blind, Massachusetts, 1917, Senate no. 326. See also *Outlook for Blind*, xi., 1917, p. 33.

the other hand, so small as not really to meet the necessities of the recipients. Possibly it should be graduated according to certain conditions, as financial circumstances of relatives, age, physical condition, etc., besides ability to earn some part of one's livelihood—not a little depending on willingness to engage in remunerative labor or to learn a vocation. It is highly desirable that in whatever cases it may be possible the amount of the pension be applied toward medical or surgical treatment, with a view to improving vision or reducing its impairment.¹

Funds for pensions should for the most part, or at least in considerable part, come from local sources. To secure the best results, however, some assistance from the State is desirable. This is for two reasons: to help the poorer communities, which otherwise would find it difficult to raise the necessary money; and to make local authorities more amenable and more willing to accept advice and oversight from the State. The State should not go too far, it being understood that the local community is fundamentally responsible in the matter.² In some cases a special tax may be necessary. To meet possible constitutional objections, the pension should be expressly provided in lieu of all other relief of a public nature. (It should also be set forth that the recipient in accepting relief is not to be regarded thereby as a pauper.) A compulsory pension is likely to be the more effective one. If left optional or at the discretion of local authorities, it can be refused with little trouble, or may not be extensively availed of.

There should be certain important qualifications to admit one to the benefits of the pension. There should be adopted a uniform and workable definition of blindness, so far as this is possible—yet one with some degree of elasticity or fitted to meet different circumstances, and in considerable measure with economic bearings.

The pension should be afforded as little as possible to blind persons who have other infirmities or other forms of incapacities (including old age), which of themselves might entitle one to relief—though there might often be added compensation in consequence of blindness. Where blindness and old age coexist, the latter may often be regarded as the major handicap, and as the actual basis for relief.

Mendicants or persons with known vicious habits should be excluded from the pension. To keep blind persons from one State from entering another to secure the pension benefits, one should only be eligible to it who has become blind in the State where it is claimed, or

¹ In certain instances the pension might be used toward the cost of a higher or special education. The pension might also be in greater or less coördination with exemption or other privileges granted to the blind.

² See Message of Governor of Maine, 1917, p. 7.

was living in it at the time of the enactment of the law, or has had residence in it for at least several years. Similarly, to prevent blind persons from moving from one county to another for pension advantages, a previous residence of perhaps a year may be required—though between different counties there should be effected some sort of adjustment or equalization arrangement as to pensions for blind migrants.¹

Investigation and recommendation as to cases to be afforded pensions should preferably be made by some State agency, possibly a State agency for the blind, such being less subject to local influence or pressure, personal or political. Administration of the pension system, with the direct awarding of grants, should preferably be in the hands of a local agency, possibly the county body dealing with fiscal matters—but even here there should be some measure of State supervision, as in the setting of standards or in the requiring of reports. In other words, the agency for determining to whom relief should be given, and the agency for dispensing relief, should be different. It is generally regarded as unwise for a special agency for the blind to attempt to administer the pension, or to make awards. Confidence in it in other and more constructive respects might be strained. By some blind persons it might be felt that they were not receiving a large enough pension, and resentment might be aroused toward its other activities, with decreased willingness to have part in them. The matter has thus been stated:

It would seem . . . that to load down a commission for the blind with a large relief-giving responsibility would tend to destroy the frank relationship between the commission and the blind, and in general to demoralize the effectiveness of the entire system.²

An efficient system of case work should be followed, with standards set by State authorities.

Advices, preferably in the form of affidavits, should be secured from citizens of the community where the blind person lives as to his condition and needs. Medical examination so far as feasible should be conducted by eye specialists, acting for the State; otherwise, general physicians are to be availed of.³

There should be periodical investigations and examinations of those

¹ In connection with the pension system, a drastic measure is possible to prevent the marriage of one blind person with another blind person. Such marriage may be held a bar to the pension; only a single pension may be allowed for both parties (there not being included persons who were married before the enactment of the law, or persons becoming blind after marriage).

² R. B. Irwin and E. C. McKay, *op. cit.*

³ On standards for pensions, see Proceedings of American Association of Workers for Blind, 1931, p. 6; 1933.

receiving relief. In some cases awards may be placed in trust in the hands of responsible citizens, to prevent their unwise expenditure.

With all existing agencies for the blind, including commissions, workshops, and other organizations, there should be complete accord and coöperation; and it should be felt as far as possible that their work is being complemented. With philanthropic organizations of a private character there should also be concert.

CONSTITUTIONALITY OF PENSION SYSTEM

A question which requires attention in the adoption of the pension system for the blind in the United States is whether the enactments providing for it will be constitutional. Objection might possibly be based on such claim as that private property was being taken without due process of law, that public funds were being appropriated for private purposes, or that class legislation was involved, provisions in respect to such matters being found in the Constitutions of practically all the American Commonwealths.

In the State of Ohio the matter has been pronounced upon judicially in several particulars. In 1906 in the case of *Auditor of Lucas County v. State*¹ the constitutionality of a statute on the subject first received attention. The Court decided that the statute was in contravention of the provision of the Constitution which forbade the taking of public funds for private purposes. After recounting the objects of the several State institutions for the infirm classes, it declared:

But it does not follow that it would be either wise or constitutional to select out a class having some particular physical infirmity, and then confer a bounty upon the individuals of that class. If a bounty may be conferred upon individuals of one class, then it may be conferred upon individuals of another class, and if upon two, then upon all. And, if upon those who have physical infirmities, then why not upon other classes who for various reasons may be unable to support themselves? And, if these things may be done, why may not all property be distributed by the State?

The Court then undertakes to state the powers of the State with respect to the levying of taxation upon its citizens, and the purposes for which such taxation may be made. The existence of provisions in the Constitution for the establishment and maintenance of "institutions" for certain of its classes is regarded as merely the recognition of the fact "that by enlightened people such classes are treated as wards of the state." The Court continues:

¹ 75 Ohio, 114, 78 N. E., 955, 7 L. R. A. (n. s.), 1196. The auditor of one of the counties of the State had refused to allow payment on the ground that the Act was unconstitutional, the matter reaching the Court through the issuance of a mandamus to compel payment. See also *Davies v. State*, 27 Ohio C. D., 593, 6 Ohio C. C. (n. s.), 417 (1905); Report of Ohio Board of Charities, 1907, p. 83; *Outlook for Blind*, i., 1907, p. 12.

No provision is made in the Act to insure the application of money to the support of the individual, or to prevent him from becoming a public charge, or in any manner to control its use by him. The Act does not direct that the payments shall continue during the life-time of the beneficiary; nor does it limit the time, nor provide that payments shall cease with the needs of the donee, or provide for any subsequent inquiry. It is an indeterminate, gratuitous annuity, a gift pure and simple; and being so, the legislature is without authority to make it from the public funds. . . .

It may be said that funds used for the care of the poor are used for a public purpose, and that moneys used under the provisions of this Act will subserve a public purpose for the reason that they will enable many blind persons, aided by their own efforts or those of their friends, to support themselves, and thus escape becoming a public charge. The wisdom of the legislation is not questioned. The power of the legislature to so enact is the question presented here. . . .

If the power of the legislature to confer an annuity upon any class of needy citizens is admitted upon the ground that its tendency will be to prevent them from becoming a public charge, then innumerable classes may clamor for similar bounties, and, if not upon equally meritorious grounds, still on a ground that is valid in the law, and it is doubted that any line could be drawn short of an equal distribution of property.

Judicial opinion is later expressed with regard to other aspects of the pension laws. In 1913 a law was passed, creating, under the provisions of the State Constitution which required the establishment and maintenance of "institutions for the blind," an "institution," which was affirmed to be for the extension of aid to the needy blind. Soon after, in 1913 and 1914, the Court was called upon to test the application and the constitutionality, not only of this enactment, but of all the pension laws on the statute books. Judgment was rendered in three cases, involving separate matters, all of which were decided together, namely, *State v. Edmondson*, *State v. Benham*, and *State v. Sayre*.¹ After reviewing with approval the preceding decision,² the Court takes up a newer Act, in which it is declared that the aid granted "shall take

¹ 89 Ohio, 351, 106 N. E., 41; affirming 1 Ohio App., 472, 17 Ohio C. C. (n. s.), 179. See also Report of Attorney-General of Ohio, 1913, pp. 60, 833; 1914, pp. 278, 1340; 1915, p. 1402; 1917, pp. 50, 1983; 1919, p. 53. The first of these cases was brought after the demand of a blind man for a pension under the law of 1908 had been refused by the auditor of a certain county, on the ground of its unconstitutionality. In the second case application had been made that the county treasurer be required to pay over to the State treasurer all moneys collected by tax levies for the benefit of the needy blind, the latter having also declined on like ground. The third case was an original action, in the form of a petition praying for a mandamus to obtain from a county auditor the relief provided in the Act of 1908 up to the time that the Act of 1913 became operative.

² It was considered to be held in that case that, inasmuch as the removal of a beneficiary to a home or institution not maintained by the State was declared by the statute not to destroy the benefits conferred by it, such was not a law for the public relief of poor persons, but for a bounty to "a certain selected class of persons." It was further pointed out that in the original Act no provision had been made for the application of the funds for the support of the individual, or to keep him from becoming a public charge, or to control the use of the money.

the place of all other relief of a public nature," there also being power to inquire into the qualifications of all applicants, and to increase or decrease the amount allowed, or to discontinue it altogether, and the relief being limited to those who might become charges upon the public. This law is found to be within constitutional limitations. The Court said:

Every safeguard has been adopted to secure the application of the money to the support of the individual and prevent him from becoming a public charge. It is not an indeterminate annuity, unlimited in time or uncertain in its application. The express object and the practical provision of the enactment is to furnish relief to the blind who are poor and needy.

Proper legislation with respect to one group or class among the poor or infirm or disabled is not at variance with constitutional prohibitions, and taxation in keeping therewith may be imposed.

The Court then passes to the consideration of the latest Act, in which an "institution" is created for the granting of relief to the blind, but otherwise very much on the order of the original pension law of the State. With respect to this matter, it declared:

We think it clear that by the use of the word "institutions" in . . . the Constitution it was intended to designate places where, and the means by which, the afflictions of the persons referred to may be relieved. . . . We do not think that the use of the term "institution" in the statute under examination here, in connection with the board which shall administer the relief provided for, contributes anything to the validity of the law.

This law was also found defective in not providing safeguards for the grants, especially with respect to the responsibility of relatives, and with respect to the condition and needs of the recipient.¹ As, however, it was believed to be the distinct legislative intent to establish a pension for the blind, the provisions of the different laws which were not unconstitutional were held not to be repealed, and remained in force.

On other particulars in respect to pensions for the blind has judicial opinion been pronounced, but rather by way of interpretation of matters called into question. One has to do with pointing out the difference between a mandatory and a permissive law. The issue first arose in the case of *People v. Board of Supervisors of De Witt County*,² which came up in Illinois in 1911. Here a blind man had sought by mandamus proceedings to compel the local administrative authorities

¹ Objection was also found to provisions of the law which might give to certain administrative boards authority to review orders of a court, and to provisions which required all local pension funds to be turned over to the State treasurer.

² 161 Ill. App., 529. As to the law in Wisconsin, see Opinions of Attorney-General of Wisconsin, 1917, p. 691; Report of Wisconsin Bureau for Blind, 1923, p. 12.

to grant him the relief as specified in the provisions of the law. The Court held that the Act was a purely discretionary one, and hence that the administrative authorities had power to extend or to withhold relief as they saw fit.

In a similar case in Kansas in 1914, *Gleason v. Board of Commissioners of Sedgwick County*,¹ a blind man, claiming to be destitute, and to have complied with all statutory requirements, had demanded the full amount authorized by the law, instead of a smaller sum which had been granted him. The contention of the local administrative authorities that the law was discretionary only was upheld by the Court, it pointing out that the law was not mandatory, but merely permitted the payment of the full sum.

In the State of Missouri certain questions have come before the courts having to do with the definition of blindness—the extent of the loss of sight to entitle one to the pension provided by law. In the case of *Dahlin v. Missouri Commission for the Blind*² in 1924 a person had claimed to be blind, though in possession of a greater amount of vision than “light perception,” the term employed in the law. After pointing out that the statute, being of remedial nature, was designed to be liberally construed, the Court declared:

We do not think that the legislature intended to exclude . . . those who can merely distinguish between light and darkness, or motion or the direction of motion, and no more. “Light perception,” as used in the Act, we construe to mean all that field or scope of vision from the mere ability to distinguish between light and darkness up to that ability to discern form. . . . Such a restricted and limited construction would, for all practical purposes, render ineligible all those except the totally blind.

In *Abel v. Missouri Commission for the Blind*³ in the same year, where the question was much the same, a pension was likewise allowed. In the case of *Shelley v. Missouri Commission for the Blind*,⁴ however, in 1925 a more conservative opinion was registered. In holding that the legislature, under the Constitution of the State, had the right to define the “deserving blind,” the Court placed a strict construction upon the term “light perception,” and refused to extend it to include perception of form or motion.

¹ 92 Kans., 632, 141 Pac., 584.

² Mo. App., 262 S. W., 420. See also Opinions of Attorney-General of Wisconsin, 1917, p. 39. A blind man resident in a workshop for the blind is not an inmate of a charitable institution, within the meaning of the law. *Ibid.*, p. 52.

³ 217 Mo. App., 410, 266 S. W., 762.

⁴ 309 Mo., 612, 274 S. W., 688.

NOTE TO CHAPTER XLVII.—On the matter of pensions for the blind, see Louis Stricker, “Blindness in Hamilton County,” 1918, pp. 65, 67, 70; E. C. Johnson, “Annuities for Blind,” 1910; E. C. Johnson and B. G. Johns, “Annuities for Blind,” 1876; S. S. Forster,

"Gardner's Bequest for Blind," 1880; Robert Meldrum, "Pensions to Blind" (Conference of Scottish Outdoor Teachers Union), 1896; T. J. Dunning, Lecture on Best Mode of Relieving Blind, 1866; Cleveland Society for Blind, "The Blind in Cleveland," 1918, p. 70; Report of Royal Commission on Blind, Deaf and Dumb, etc., 1889, ii., p. 431; League of Nations Health Organization, Report on Welfare of Blind, 1929, pp. 67, 236; Report of Society for Granting Annuities to Blind, 1907; American Encyclopedia and Dictionary of Ophthalmology, 1916, ix., p. 6419; Transactions of American Ophthalmological Society, 1923, p. 301; Proceedings of National Conference of Charities and Correction, 1916, p. 346; Proceedings of Minnesota Conference of Charities and Correction, 1899, p. 58; Report of Wisconsin Board of Control, 1924, p. 13; 1926, p. 394; Report of New York City Department of Public Welfare, 1930, p. 40; California Department of Social Welfare, "The Blind in California," 1929, p. 5; Charity Service Reports (Cook County, Illinois), 1916, p. 56; Ohio Bulletin of Charities and Correction, xiv., 1908, 2, March, p. 87; xv., 1909, 1, Feb., p. 28; xvi., 1910, 2, May, pp. 58, 62, 93; xxii., 1916, 3, June, p. 40; Illinois Institution Quarterly, vii., 1916, 3, Sept., p. 24; *Monthly Labor Review*, xxxiii., 1931, 4, Oct., p. 858; Report of Conference of Blind and Their Friends (England), 1890; Report of Conference on Matters Relating to Blind (England), 1902, p. 166; Proceedings of International Conference on Blind (England), 1908; 1911, p. 377; Report of Royal Commission on Welfare of Blind Persons (Manitoba and Saskatchewan), 1930, p. 30; Proceedings of American Association of Workers for Blind, 1905, p. 27; 1911, p. 90; Proceedings of World Conference on Work for Blind, 1931, p. 346; Report of Massachusetts Commission for Blind, 1915, p. 72; Report of Wisconsin School, 1928, p. 397; Ohio School, 1905, pp. 89, 125 (8th reunion of former pupils); *Sunday at Home*, 1890, p. 396; *Nineteenth Century*, cxl., 1932, p. 443; *Lancet-Clinic*, lxix., 1912, p. 172; lxxi., 1913, p. 487; *Wisconsin Medical Journal*, xxiii., 1924, p. 144; *Colorado Medicine*, xxi., 1924, p. 307; *Journal of Missouri State Medical Association*, xix., 1922, p. 346; xx., 1923, pp. 28, 176, 204; *Charities and Commons*, vi., 1901, p. 249; ix., 1902, p. 145; xv., 1906, p. 616; xvii., 1907, p. 925; xix., 1907, p. 1105; *The Seer*, i., 1931, 3, April, p. 77; *World of Blind*, March, 1916; *Outlook for Blind*, ix., 1915, pp. 72, 79; xi., 1917, p. 31; Sept., 1927, p. 44; *Social Service Review*, iv., 1930, p. 238.

CHAPTER XLVIII

PENSIONS FOR BLIND: IN PRACTICAL APPLICATION

HISTORY OF PENSION LEGISLATION FOR BLIND

The first public pension system for the blind in the United States was created in the city of New York in the year 1866, when the city department of charities was permitted to give them monetary assistance—following unsatisfactory efforts to provide aid through industrial undertakings (a matter to which reference has already been made). The grant to one person was not to exceed \$50 a year, nor the total \$20,000. On the adoption of the present city charter in 1897 the amount to be allowed was increased to \$75,000 a year, but with not more than \$100 to any one person. In 1913 the law was amended to permit the full grant of \$100 to each recipient, with a total annual allowance of \$150,000. In 1923 the maximum amount for each person was raised to \$300, with \$200,000 as the total sum.¹

Of the States with general pension laws, Ohio holds priority in point of time, as well as in point of experience. In 1898 a statute was enacted, as an amendment to the poor law, allowing counties to grant not more than \$100 a year to worthy blind men and women who had no property or other means of support, and who had been in the State five years and in the county one. In 1902 another law was passed, authorizing certain cities to appropriate a similar sum for each needy blind person. In 1904 both these enactments were repealed, but for the former a practically equivalent measure was substituted. In 1906, as we have seen, this Act was declared unconstitutional. In 1908 a law was enacted, by which special commissions were to be created for each of the counties, in whose hands was placed the levying and the distributing of funds. Relief in a sum not exceeding \$150 a year was extended in lieu of all other public aid, a "needy" blind person being carefully defined. In 1913 the law was changed so as to vest powers in the regular boards of county commissioners. In this year also, however, all existing legislation upon the subject of pensions was repealed, and a new law substituted. Advantage was taken of the provision in the State Constitution which declared that institutions for the blind and

¹ Laws, 1875, ch. 404; 1882, ch. 410, §§ 194, 418; 1897, ch. 378, §§ 230, 676; 1901, ch. 46, §§ 230, 676; 1913, ch. 290; 1923, ch. 129. For early rules as to applicants, see Resolutions of Board of Aldermen and Councilmen of City of New York, 1866.

other classes should be established and maintained; under it was created an "institution" for the blind, which was to mean a board of relief and benefit for the needy blind. By such agency there might be granted a sum not exceeding \$240 a year to a blind person who was unable to provide himself with the necessities of life. As we have seen, this law was found to be unconstitutional, and the Act of 1908, supposed to have been repealed, remained in force. In subsequent years the pension laws have been continued, with greater or less amendment of different provisions.¹

The next State to adopt a pension law for the blind was Illinois in 1903, being permissive till 1915, when it became obligatory.² Wisconsin followed in 1907.³ In 1911 Kansas adopted a pension law for the blind, among other classes.⁴

In 1913 in Missouri an amendment to the State Constitution was submitted to the voters to authorize the granting of pensions to the blind, as follows:

Provided, further, that nothing in this Constitution shall be construed as prohibiting the General Assembly from making provision by law for the payment of pensions or allowances to the deserving blind, or from granting and authorizing by law counties or cities or incorporated villages of this State to provide for the granting and payment of such pensions or allowances.

This, however, was defeated at the general election. In 1915 the following amendment was proposed, which was adopted in 1916:

Provided, further, that nothing in this Constitution shall be considered as prohibiting the General Assembly from granting, or authorizing the granting of, pensions to the deserving blind, as may be provided and regulated by law.

In 1920 the provision was amended to permit a tax levy not to exceed 3 cents on \$100 of property valuation, any balance left over being devoted to the State commission for the blind, and any further balance to the public school fund. Under the authorization of this constitutional amendment due legislation has been enacted for pensions.⁵

¹ Laws, 1898, p. 270; 1902, p. 564; 1904, p. 392; 1908, pp. 56, 256; 1910, p. 50; 1911, p. 43; 1913, pp. 60, 833; 1914, p. 200; 1919, p. 431; 1927, p. 108; Ann. Gen. Code, 1931, §§ 2965-2970. Generally counties were authorized to levy special taxes for the pensions. At times general county funds might be transferred for the purpose. In 1910 the amount might be increased or decreased.

² Laws, 1903, p. 138; 1915, p. 256; 1923, p. 174; 1925, p. 464; 1927, pp. 202, 203; 1933, p. 210; Rev. Stat., 1931, p. 264.

³ Laws, 1907, ch. 283; 1911, ch. 663; 1917, ch. 378; 1919, ch. 563; 1921, ch. 579; 1923, ch. 355; 1925, ch. 164; 1927, ch. 95; 1929, ch. 349; Stat., 1931, §§ 47.08, 47.09.

⁴ Laws, 1911, ch. 146; 1913, ch. 149; 1915, ch. 263.

⁵ Constitution, Art. IV., sec. 47; Laws, 1913, p. 782; 1915, p. 411; 1921, p. 554; 1923, p. 303; 1925, p. 517.

In 1915 four other States enacted pension laws: Iowa,¹ Maine,² Nebraska,³ and New Hampshire.⁴ In 1916 in Massachusetts the State commission on economy and efficiency was directed to report on the advisability of establishing a pension system for the blind; and in 1919 graduated relief was permitted.⁵ In 1917 a law was adopted by Idaho;⁶ in 1918, by New Jersey,⁷ in 1919, by California (after constitutional authorization)⁸ and by Colorado (after action by initiative and referendum);⁹ in 1920, by New York (besides the enactments for New York City);¹⁰ in 1921, by Connecticut (relief being authorized),¹¹ and Washington;¹² in 1923, by Arkansas;¹³ in 1924, by Kentucky;¹⁴ in 1925, by Minnesota¹⁵ and Nevada;¹⁶ in 1928, by Louisiana;¹⁷ in 1929, by Maryland;¹⁸ and in 1931, by Utah.¹⁹

Pensions for the blind have on the whole been slow in making a place for themselves in American legislation. Before the beginning of the twentieth century laws providing for them (other than local measures) had hardly made their way to the statute books. Since that date pension laws have been enacted in something like half of the States of the Union. Within the more recent years the movement may be said to have advanced at an accelerated rate. No State with a law has ever repealed it. Action appears to have been the more pronounced in the Western and the Middle Western States.

Amendments to pension laws have been frequent. In the greater number of cases provisions have been made more liberal; in the smaller number less liberal. There has been in general a tendency to raise the amount of the pension.²⁰ Qualifications for their receipt have on the

¹ Laws, 1915, ch. 238; 1919, ch. 200; 1923, ch. 252; 1925, ch. 272; Code, 1931, §§ 5379-5384a1.

² Laws, 1915, ch. 107; 1917, ch. 300; 1921, ch. 72; 1927, ch. 164; 1929, ch. 233; 1933, p. 58; Rev. Stat., 1930, p. 1742.

³ Laws, 1915, p. 640; 1917, ch. 171; Comp. Stat., 1931, §§ 68-126-128.

⁴ Laws, 1915, ch. 94; 1917, ch. 27; Public Laws, 1925, p. 422.

⁵ Laws, 1916, ch. 139; 1919, ch. 201; Gen. Laws, 1921, ch. 69.

⁶ Laws, 1917, ch. 89; 1921, ch. 118; Code, 1932, §§ 30-3201-3206.

⁷ Laws, 1918, ch. 147; 1921, ch. 231; 1922, ch. 83; 1923, ch. 87; 1931, ch. 17; Comp. Stat., Cum. Supp., 1924, § 34-277a.

⁸ Laws, 1919, ch. 144; 1921, p. 783; 1927, p. 2308; 1929, ch. 529; 1931, p. 1892; Gen. Laws, 1931, pp. 363-370.

⁹ Laws, 1919, p. 310; 1925, ch. 60; 1927, ch. 66; 1929, ch. 529; Comp. Laws, 1921, §§ 720-736.

¹⁰ Laws, 1920, ch. 318; 1922, ch. 185; 1923, ch. 129; Cons. Laws, 1930, pp. 2692-2694.

¹¹ Laws, 1921, ch. 231.

¹² Laws, 1921, p. 207; 1933, ch. 102; Comp. Stat., 1923, §§ 10001-10007.

¹³ Laws, 1923, ch. 576; 1929, ch. 159; 1931, ch. 158; Dig. Stat., Supp., 1931, §§ 841e, 8189a.

¹⁴ Laws, 1924, ch. 18; Stat., 1929, §§ 1893a-10-12.

¹⁵ Laws, 1923, ch. 336; Stat., 1927, § 4617-1.

¹⁶ Laws, 1925, ch. 32; 1929, ch. 94; Comp. Laws, 1929, §§ 2313-2321.

¹⁷ Laws, 1928, ch. 101.

¹⁸ Laws, 1929, ch. 271.

¹⁹ Laws, 1931, ch. 50.

²⁰ The amount at first was often not over \$100 for each beneficiary.

whole become stricter. There has also been a tendency to make the laws of mandatory character rather than of optional.

PUBLIC ATTITUDE TOWARD PENSIONS

The enactment of pension laws for the blind has proved much easier in some States than in others. In some cases bills have to be offered in several successive sessions of the legislature before affirmative action is secured; in other cases a bill becomes law on its first introduction. Occasionally a bill when first passed is vetoed by the Governor. Sometimes the pension law is enacted by a heavy vote.¹

The efforts that have been put forth to secure pensions for the blind have come in the largest part from the blind themselves. Among their organizations the securing of a pension law is often regarded as a primary activity; while in certain cases some sort of organization has been effected for this very purpose. In more than one instance State-wide campaigns have been conducted for the enactment of measures. Now and then it has even occurred that blind persons have entered politics to show the strength they might exercise.² Friends of the blind have likewise had a part in obtaining legislation, very effective help sometimes being lent by organizations of workers for the blind. General social or civic bodies have at times been concerned. A notable part has been played by physicians (including eye specialists). In not a few cases a widespread interest has been taken in the matter, with now and then the presentation to the legislature of lengthy petitions praying for action.³

As the condition and the needs of the blind have become known, especially as a result of such organized effort, legislators as well as citizens in general are found as a usual thing ready to listen sympathetically and with favor to the proposal. When an unwilling ear is turned, the reason more often than not lies simply in the fear of the expense that would be incurred by the public treasury.

Pension laws for the blind may now with little doubt be regarded as an accepted procedure in the United States. Coupled as they are to a greater or less extent in principle or in practice with pension measures of other kinds, and with increasingly liberal views in the course of the years with regard to legislation of this nature, together with the grow-

¹ In Missouri the first proposed amendment to the State Constitution authorizing pensions was defeated by a vote of 214,951 to 255,717; the second was carried by a vote of 385,627 to 272,908; and the third was carried by a vote of 455,227 to 295,788. In Colorado the measure was adopted by a vote of 131,409 to 9440.

² See *Outlook for Blind*, x., 1916, p. 52; xi., 1917, p. 30; Message of Governor of Ohio, 1908, p. 38.

³ On reasons for the defeat of a proposed measure, see Report of Missouri School for Blind, 1914, p. 16; 1915, p. 16.

ing sentiment in their favor among those who have to do with the problems of the blind, their adoption will probably become even more general in time.¹

GENERAL PROVISIONS OF PRESENT PENSION LAWS

Legal measures providing for pensions for the blind are found in the following States: Arkansas, California, Colorado, Connecticut, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, Ohio, Utah, Washington, and Wisconsin (besides the pension for New York City).² The provisions of the laws in most of these States are in general correspondence.³ In some States the law is directory or mandatory, the pension being required to be granted: Colorado, Idaho, Illinois, Louisiana, New Jersey, New York, Ohio, and Wisconsin; in the remainder the law is of but permissive character, the matter being left to the discretion of the proper authorities. As a general thing applications for pensions are made to some county (or local) agency having charge of fiscal matters or to some county official (including a judge).⁴ Awards or payments are as a rule made by county boards or officials (including clerks, auditors, treasurers, commissioners of public welfare, etc.).⁵ Costs for pensions are borne by county funds, except in California, Colorado, Connecticut, Maine, Massachusetts, Minnesota, Missouri, and Wisconsin, these States paying one-half or one-third.⁶ (In New York City regular city funds are employed.) In most States costs come from regular public funds, or from funds for general poor relief. In Arkansas, California, Idaho, Illinois, Missouri, Nevada, Ohio, Utah, Washington, and Wis-

¹ Bills for pensions have been offered in most of the States. A bill has been offered in Congress to pension all blind males over sixteen years of age, and all blind females over fourteen, who have lived one year in the United States and who did not have incomes over \$450 a year, the amount to be allowed being \$50 a month. 57th Cong., 1st sess., H. R. Bill 15188, 1902.

² Not included are certain possible local arrangements.

³ The laws of certain States bear much resemblance to each other.

⁴ In Massachusetts, Minnesota, New Jersey, and New York applications are made to the special State agency for the blind. In these States and also in Colorado, Connecticut, Louisiana, Missouri, and Washington power is conferred upon the agencies specified to make investigation of or vouch for applicants. In Missouri application is to the State agency or a local judge. In California investigation is made by the State department of social welfare.

⁵ In Colorado, Connecticut, Massachusetts, and Minnesota, awards are made by the State agency for the blind, in Maine by the Governor and Council, in Missouri by the State auditor, in California by the State department of social welfare, and in New Jersey by a judge. In Connecticut administration is through the State board of education of the blind; in Maryland, through the State workshop for the blind; in Utah, through the State school; and in Arkansas, through the State bureau caring for Confederate veterans. (In New York City it is through the city department of public welfare.) In a few States provision is made for appeals to courts.

⁶ In Maine cities and towns may assist.

consin there is a special tax for the purpose, usually at the rate of two-tenths or three-tenths mill on the \$100 of assessed property valuation.¹

The amount which may be allowed to a beneficiary varies somewhat in the different States. In general there is an upper limit set, or a maximum amount fixed, the actual sums granted being in theory graduated up thereto, with smaller sums possible at the discretion of the proper officials. The maximum ranges from \$150 to an amount several times as great. The most frequent sum is \$300.² In certain cases amounts are adjusted to apparent needs, and in a few to earning capacity. In a number of States the undertaking of permanent support is expressly forbidden. In certain ones the amount of the pension may be increased, decreased, or discontinued if deemed desirable.

The benefits are in general intended for the adult blind only, in some cases this term being employed, or the lower age limit being set at twenty or twenty-one.³ As a usual thing, also, residence of a certain number of years in the State and of a smaller number in the county is a prerequisite. The number as to the county is usually one.⁴ The most frequent number as to the State is five or ten.⁵ In some cases there is an added qualification that blindness must have occurred within the State.⁶

There are generally further conditions to entitle one to relief. The regulations surrounding the acceptance of applicants are stricter in some States than in others. One requirement is that the beneficiary's annual income be not greater than a given sum (and possibly no property over a fixed sum).⁷ In certain States it is enjoined that

¹ In Arkansas funds are derived from the license fees for billiard and pool rooms.

² In New Hampshire it is \$150; in Arkansas, \$200; in Idaho, \$240; in Kentucky and Maryland, \$250; in Connecticut, Massachusetts, Minnesota, and Wisconsin, \$360; in Illinois, \$365; in Ohio and Washington, \$400 (\$600 for blind couple); in New Jersey, \$480; and in California, Nevada, and Utah, \$600. In Kansas \$600 may be allowed if by a popular vote. In Wisconsin \$480 may be allowed to a deaf-blind person. In Maryland and Minnesota blind couples are included in the amount fixed. In Missouri the rate is a flat one.

³ In several States the age is sixteen. Sometimes the lower limit for females is eighteen. In Louisiana one must be over sixty or incapacitated; and in Colorado, over forty or in great need, without the possibility of self-help.

⁴ In Idaho and Illinois it is three; in Colorado and Kansas (and New York City), two; and in Kentucky, five.

⁵ It is five in Arkansas, Colorado, Iowa, Louisiana, New Hampshire, and New Jersey; ten in Illinois, Kansas, Kentucky, Maine, and Wisconsin; four in Washington; and seven in Arkansas and Utah.

⁶ One must have become blind in the State in Ohio and Washington; blind in the State or at the time of the enactment of the law in Nevada; blind in the State or have resided therein five years in New York, and ten years in California and Missouri; and seven years in Idaho and Maryland; blind at the time of the enactment of the law or have resided in the State five years in Nebraska; blind in the State or at the time of the enactment of the law or have resided therein five years in Minnesota; blind in the State or at the time of the enactment of the law in California; and blind at the time of the enactment of the law in New Jersey.

⁷ In Iowa, Maryland, and Nebraska this is \$300; in Colorado, \$360; in Kentucky, \$400 (including earnings and other pensions, and with no property in excess of \$2500); in

recipients be not inmates of public or private institutions.¹ In a few pensions are not available to those otherwise a public charge or having public relief.² In a few relief is withheld from beggars.³ In a few it is denied to those already having another infirmity, or to those who may be expected to be self-supporting to a greater or less extent.⁴ Relief is barred in a few States on the marriage of two persons already blind.⁵ Relief in certain States is not to be afforded to those having relatives able to assist.⁶ Other frequent qualifications are that recipients must be of good moral character, and citizens of the United States.

The pension is often called relief for the needy blind.⁷ A satisfactory definition of a "needy" person is not often found. In the greater number of States the pension is for persons, with insufficient means for support or maintenance, or who are unable to support themselves or to provide the necessities of life (and perhaps for those persons who would otherwise become public charges or a charge upon those not required to support them). In most cases it is declared that the relief is afforded in place of all other public aid. (In a few States the recipient is expressly declared not to be a pauper in consequence thereof.)

The extent of the loss of sight to allow one to receive aid, where stated, varies considerably among different States. The condition most frequently found is that one must be deprived of useful vision (usually in an economic sense).⁸

In most States application for a pension must be accompanied by affidavits of two citizens (one often a physician), testifying as to need, residence, and fact of blindness.⁹ The making of a false statement is Illinois, \$465 (for married couples \$1000); in Missouri, \$600 (and with no property in excess of \$5000); in Wisconsin, \$780 (including amount of pension); and in California and Utah, not over \$1000. In Louisiana it may not be greater than the amount of the pension. In a few States reimbursement is possible from one's estate.

¹ California, Colorado, Illinois, Iowa, Kentucky, Maine, Minnesota, Missouri, Nebraska, Utah, Washington, and Wisconsin (besides New York City).

² Colorado and Minnesota. In Washington at first "assistance" was ostensibly for those in need of industrial aid.

³ California, Kentucky, Maryland, Minnesota, Missouri, New Jersey, Utah, Washington, and Wisconsin.

⁴ As to those with another infirmity in New Jersey and Utah; as to those in a school for the blind in Wisconsin; as to those receiving a higher education in New York; in Colorado as to those capable of self-support; in Missouri and New York, as to those able to be trained; and in New Jersey, as to those unwilling to do any work that may reasonably be requested.

⁵ Maryland, New Jersey, and New York. (In New Jersey relief may continue for one in case the parties were already receiving aid.)

⁶ Arkansas, Colorado, Louisiana, Utah, Washington, and Wisconsin. (In Minnesota relatives are not relieved of responsibility.)

⁷ The word "pension" is not often employed.

⁸ In Missouri there must be nothing more than light perception; in Arkansas and Maine, not more than one-tenth of normal vision; and in California, Idaho, and Kansas, general loss of sight. In Illinois and Iowa the question of blindness is to be determined by proper medical examination.

⁹ A fee of from \$2 to \$10 may be granted for making ocular examination.

sometimes declared to be perjury, for which a special penalty may be attached. In a number of States it is provided that additional examinations may be made as is found desirable.¹ In some States special use of pension grants is authorized, especially for surgical treatment or for vocational training.²

RESULTS OF PENSION SYSTEMS

Where the pension laws have been only permissive, the counties have in general been slow to take advantage of them. After several years of the existence of such laws, pensions may be found allowed in only one-third or one-fourth of the counties.³ Some counties, on the other hand, have availed themselves of the laws from the start. In the course of time the number of counties with pensions has increased. In most States they are now granted in the greater number of counties, though in some States in only the minority. The proportion of counties in the different States varies from one-tenth or one-sixth to almost all. Where the law is mandatory, most counties afford pensions.

In most States pensions are granted in an amount below the maximum permitted, though there are certain ones which approach this maximum. The average amount actually allowed in different States ranges from a little under \$100 to a little over \$300, for the most part in the neighborhood of \$200.⁴

The total amount granted in pensions for the blind in the United States today is hardly under \$5,000,000. The amount has grown rapidly. In ten years' time it has increased about fivefold.

The proportion of adult blind persons in the different States who are on the pension roll varies greatly. In some the proportion is as low as one-fifth or one-sixth, while in others very nearly all the blind are embraced.⁵ The older the pension law, the larger is the proportion

¹ In Idaho, Maryland, New Hampshire, New Jersey, Ohio, and Washington the allowance may be employed for medical or surgical treatment, when likely to be beneficial; in Colorado, Maryland, and Missouri, for this or vocational training, and in Louisiana, for the latter purpose. In New York the grant may be availed of to place one in an institution. In Maryland and New Jersey trustees may be selected to have charge of the pension. In Kansas the law applies to other disabled classes, including in addition persons who have lost hands or feet or who are totally incapacitated for manual labor.

² In Missouri data as to blindness, especially its causes, may be collected.

³ On the difficulty of action by counties, see *Outlook for Blind*, ix., 1915, p. 53.

⁴ It is a little less than \$100 in Connecticut, Idaho, Kentucky, and Louisiana; somewhat over \$100 in Minnesota and Ohio; a little over \$150 in California, Maine, and New Hampshire; a little under \$200 in Iowa, Massachusetts, and Nebraska; a little over \$200 in Colorado, Missouri, Nevada, and New Jersey; in the neighborhood of \$250 in Maryland, New York (State), and Wisconsin; and somewhat over \$300 in Illinois. The amount varies in different States from year to year. See compilations of American Foundation for the Blind.

⁵ See publications of American Foundation for the Blind. See also R. B. Irwin and E. C. McKay, *op. cit.*; reports of State departments of public welfare, etc.

likely to be. The proportion in most cases has increased in the course of time.

In the following table is given for the several geographic divisions of the United States the percentage of the blind, and of males and females separately, who receive State or county aid—for the most part in the form of pensions (1920).¹

PERCENTAGE OF BLIND RECEIVING PUBLIC AID ACCORDING TO GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION	PER CENT OF TOTAL		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
United States.....	18.9	20.5	16.7
New England.....	22.3	24.0	20.1
Middle Atlantic.....	8.5	9.8	6.9
East North Central.....	33.4	35.4	30.6
West North Central.....	17.5	18.9	15.5
South Atlantic.....	13.4	15.8	9.7
East South Central.....	11.4	12.8	9.3
West South Central.....	11.0	11.6	10.2
Mountain.....	27.3	29.5	23.4
Pacific.....	10.6	12.0	8.3

Of all blind persons in the country at large almost two-fifths are reported to be in receipt of such aid. The highest proportion, approximately one-third, is found in the East North Central division, and the lowest, about one-twelfth, in the Middle Atlantic. The second highest proportion is for the Mountain division (one-fourth), followed by the New England (over one-fifth), and the West North Central (under one-fifth). The three southern and the Pacific divisions have proportions not very far apart (from one-eighth to over one-tenth). (Among different States proportions range from a few per cent to over one-half.) There are indicated here in considerable degree the extent to which special pension systems for the blind have come into use in different parts of the country.² There is also reflected in some measure the varying poor relief procedure as applied to the blind.³

In all cases male recipients outnumber female, the ratio averaging about 5 to 4, a ratio, however, not greatly different from that between the whole numbers of the blind of the two sexes.

¹ Figures for this and the following tables are taken from report of United States Census Bureau—"The Blind Population of the United States: 1920," 1928. (For figures for individual States, see Table XXXV in Appendix A.) Relation is only to blind persons making special report.

² In all but three of the States with special pension laws operative at this time there are shown proportions of at least one-third, often two-fifths. Only a few States without such laws have proportions of over one-sixth, some much less.

³ In some instances indoor aid as well as outdoor is included, and in a few both material allowances and bare doles. Because of misunderstandings as to what was involved in public aid the proportions may to a slight extent be overestimated.

In the following table is given the percentage of the blind, and of each sex separately, receiving public aid according to race and nativity.

PERCENTAGE OF BLIND RECEIVING PUBLIC AID ACCORDING TO RACE AND NATIVITY

RACE AND NATIVITY	PER CENT OF TOTAL		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Total.	18.9	20.5	16.7
White.	19.1	20.6	16.9
Native.	19.1	20.6	17.2
Foreign born.	18.8	20.7	15.6
Negro.	18.0	20.3	14.3
Indian.	12.0	12.1	11.9
Other colored. ....	....	....	....

Native whites have the highest proportion, followed by foreign-born whites, Negroes, and Indians. The proportions for these several groups probably correspond to their proportions in the population in general of different areas in relation to the accessibility of public aid, especially in the form of pensions. (There seems to be little connection between

PERCENTAGE OF BLIND RECEIVING PUBLIC AID ACCORDING TO AGE

AGE	PER CENT OF TOTAL		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
All ages.	18.9	20.5	16.7
Under 20 years.	8.0	8.5	7.5
Under 1 year. ....	....	....	....
1 to 4 years.	2.8	0.8	....
5 to 9 years.	8.0	8.2	7.9
10 to 14 years.	8.3	9.4	6.7
15 to 19 years.	8.4	8.6	8.1
20 to 44 years.	18.6	19.9	16.6
20 to 24 years.	12.0	12.1	11.8
25 to 29 years.	17.2	18.9	14.6
30 to 34 years.	17.1	17.4	16.7
35 to 39 years.	22.7	23.7	21.1
40 to 44 years.	22.5	24.5	18.5
45 to 64 years.	23.0	24.8	19.9
45 to 49 years.	24.3	25.0	23.0
50 to 54 years.	23.6	24.7	21.5
55 to 59 years.	23.4	24.7	21.0
60 to 64 years.	21.1	24.6	16.1
65 years and over.	20.1	21.8	18.2
65 to 69 years.	23.1	25.4	19.7
70 to 74 years.	20.7	23.7	16.7
75 to 79 years.	19.6	20.3	18.8
80 to 84 years.	18.8	19.0	18.7
85 years and over.	17.3	17.7	16.9
Age not reported.	14.6	15.8	13.2

the proportion receiving public aid and the proportion gainfully employed for the different groups.)

In the preceding table is given the percentage of those receiving public aid and for each sex separately according to age.

The proportions, relatively low at the beginning, on the whole steadily advance up to middle adult life, thereafter gradually declining through the remainder of life. The ratio between the two sexes remains fairly constant at most periods. There may be several reasons why the largest proportions of the blind receiving public aid are not in advanced life or old age, the time of life, furthermore, when they are relatively most numerous. An appreciable proportion of the very old blind, especially females, are cared for in special homes under private control, or are most likely to receive attention from charitable societies. In many cases among the older groups blindness is a recent affliction, and the most immediate help available has seemed to be that of the family or other relatives. It may also be that the blind of a younger and more vigorous age are themselves more attentive to the matter and are more inclined to insist upon whatever public provision may be available for them.

With respect to pensions proper (as distinguished from public aid in general), the proportions receiving them appear to increase more steadily up to the advanced years of life.¹ The increased tendency of the older blind to be recipients of pensions is indicated from the circumstance that, while only two-thirds of the blind in general are seventy years of age or over, something like three-fourths of those having pension are of such age.

The pension laws for the blind in the United States have in large part been of experimental character. The whole procedure has been of a novel order, and in general statutes have had to find their way toward a settled policy. In some instances initial provisions have not been drawn with all the care and circumspection necessary. More than once the law has been discovered to have too liberal terms or too wide a scope.² Occasionally the definition of blindness incorporated in the statute has been found to be too broad, with many cases in-

¹ The percentages of the blind receiving pensions under twenty, from twenty-one to thirty, from thirty-one to forty, from forty-one to fifty, from fifty-one to sixty, from sixty-one to seventy, from seventy-one to eighty, and over eighty are as follows in Massachusetts (1928):—, 2.8, 6.8, 12.1, 26.2, 24.9, 19.3, and 7.9; in Maine (1911): —, 2.9, 7.3, 15.3, 20.0, 20.5, 21.5, and 12.5; in Ohio (1911): —, 3.4, 8.9, 9.3, 13.4, 18.6, 20.6, 17.2, and 8.6; in Minnesota (1926): —, 0.8, 3.1, 8.7, 15.3, 20.1, 24.9, 22.3, and 4.8; in Missouri (1930): —, 3.9, 7.1, 13.9, 17.6, 21.8, 23.7, and 12.0; and in California: —, 4.4, 6.8, 9.2, 15.8, 21.4, and 42.1 (over seventy).

² In Colorado at the beginning the number on the pension list was unduly large because of the number attracted from other States in consequence of the very liberal residence requirements. Report of Pennsylvania Commission for Blind, 1925, p. 46.

cluded that should not have been.¹ As time has gone on, there have on the whole been somewhat better enactments, though in particular States improvement seems to have been slight.

At the beginning administration of the laws likewise could not often be expected to be of a strict or of a high order. In not a few instances looseness has been tolerated; abuses even have not been uncommon.

Systematic investigations of applicants for the pension have been slow in finding their way into administrative measures; and there are still many communities where the situation cannot be described as satisfactory. In relatively few is there anything in the way of "case" handling of those seeking the pension, and follow-up work is of a very limited order. Officials are still in some instances subject to influence or pressure to allow the pension. Even with State supervision or inspection administration is at times lax.²

Conditions may, however, be said, even if slowly, to be steadily improving. Regulations to permit the receipt of pensions have in general become stricter. There are in some States a greater and greater number of applications rejected—the tendency often at first being to refuse the pension to but few. The proportion of applicants now rejected varies considerably as between different States, perhaps ranging from one-sixth to one-half. The chief grounds for rejection consist in one's not being really blind or not being really needy. Other grounds lie in the lack of some required qualification. In the greater number of communities efforts are being made towards the keeping of careful records, and towards fuller or more careful regulations. In urban centers approved methods of organized charity are being resorted to more and more, or the facilities of some such agency are availed of more and more for particular investigations.³ In certain instances distinct

¹ In Missouri, when the pension law was first enacted, the definition of blindness employed was vision not better than 40/500. Under this definition there was a total of over 6000 supposedly blind persons accepted for the pension—a number twice as great as could be paid from the tax authorized. Of this number one-half were regarded as having vision better than light perception. In the next law the definition was fixed at light perception, resulting in the cutting of the pension roll by one-half. In later years the pension roll has been kept within bounds only by the rejection of many applicants. *Archives of Ophthalmology*, lvi., 1927, p. 460; Meyer Wiener and A. M. Hayden, "Study of Blind Pension Roll of Missouri," 1927.

² Now and then pensions have been granted to persons already receiving a pension for war service, or perhaps inmates of homes for old soldiers. Occasionally a pension has been allowed to pay the costs of clothing and transportation of blind children to and from school.

³ Special regulations for the granting of pensions are various. Sometimes they are made the more likely for those who display a willingness to help themselves. Inmates of homes may be allowed a pension only when they leave; or they may be allowed to enter with the use of the pension sum as an entrance fee. At times the receiving of a pension may be discouraged, and admission to a special home or public institution encouraged. In some communities there are rather rigid requirements that mendicancy must be given up to entitle one to a pension. The same rule may apply to vicious habits.

advance has been achieved in making the pension something of a constructive force rather than a mere vehicle of relief. Among workers for the blind increasing efforts are being made to secure higher standards.¹

PUBLIC PENSIONS OF INCIDENTAL CHARACTER AND PRIVATE PENSIONS FOR BLIND

In addition to the regular pension systems for the blind in the United States, there are several other forms of pecuniary relief or assistance for them, either as public pensions benefiting them incidentally, or as private pensions. In certain counties or municipalities aid has been extended to the blind as part of their customary relief work, without specific designation, though this perhaps may not be regarded as a pension.² In Indiana a law was enacted in 1857, and still in force, allowing money to be dispensed by counties, at their discretion, to helpless blind persons directly, in lieu of their being sent to the almshouse, to avoid separation from their families.³

Pensions for blind war veterans by the National Government are not, strictly speaking, pensions for the blind. They are allowances in consideration of past services, in which incapacitation of various kinds operates to secure a larger benefit than might otherwise be the case, the loss of sight being included in such incapacitation. Under the pension law in effect prior to the European War, the sum of \$125 a month is granted to veterans who have been deprived of vision in both eyes, or who are totally blind.⁴ The number of blind persons now on the

¹On results of the pension system for the blind, see R. B. Irwin and E. C. McKay, "Blind Relief Laws, Their Theory and Practice," 1929; R. B. and M. B. Irwin, "Blind Relief Laws and Administration" (Red Cross Institute for Blind), 1920; Report of Wisconsin Board of Control, 1926, p. 394; Report of Illinois Board of Charities, 1904, p. 11; *Illinois Institution Quarterly*, vii., 1926, 1, March, p. 21; 3, Sept., p. 21; Proceedings of National Conference of Social Work, 1918, p. 269; California Department of Social Welfare, "The Adult Blind in California," 1929, p. 4; Report of Missouri Commission for Blind, 1930, p. 68; Report of Wisconsin School for Blind, 1928, p. 397; Proceedings of American Association of Workers for Blind, 1927, pp. 68, 75, 78; *Ohio Harp* (Ohio School), ii., 1905, p. 20; *Social Service Review*, iv., 1930, p. 238; *American Journal of Ophthalmology*, xiv., 1931, p. 8; *Outlook for Blind*, i., 1908, p. 131; ix., 1915, p. 53. See also reports of commissions for the blind, State departments of public welfare, etc.

²As an instance of allowances by counties to parents of blind children, see Report of Kentucky School, 1875, p. 14.

³Laws, 1857, p. 18; 1873, p. 106. There seems to be no report of any aid thus extended.

⁴Stat., 1864, p. 387; 1866, p. 56; 1868, p. 237; 1873, p. 568; 1878, p. 144; 1879, p. 484; 1880, ch. 236; 1904, p. 163; 1923, ch. 245; 1926, ch. 238. See also United States Children's Bureau, Publication no. 28, 1917, pp. 15, 213. The amount was at first \$25 a month; in 1873 it was increased to \$33.25; in 1874, to \$50; in 1878, to \$72; in 1904, to \$100; and in 1926, to \$125. (There have been allowances also for the loss of one eye.) For permanently helpless children of deceased officers or soldiers grants have been allowed. See Proceedings of American Association of Workers for Blind, 1905, p. 13; 1907, p. 129; 58th Cong., 2nd sess., 1904, H. R. Rep. 2122; Sen. Rep. 1177.

pension roll is hardly over one hundred.¹ For veterans of the European War special provisions have been made.² In New Jersey³ and New York⁴ additional pensions of \$500 are allowed for such veterans.

In nearly all the Southern States pensions have been allowed to blind Confederate veterans, ranging from \$100 to \$300 a year (with sometimes a smaller sum for the loss of one eye).⁵ In Georgia the Constitution expressly authorizes the legislature to make appropriations for this purpose.⁶

Private pensions for the blind in the United States have been rare. In Massachusetts there is a limited fund, the result of a bequest, which yields from \$40 to \$100 a year to each of a small number of blind persons.⁷ Occasional gifts have been made for the benefit of the blind, but not in the form of pensions.⁸

¹ In Pennsylvania 6.8 per cent of the blind have received a pension, either as veterans or as widows of such, the amounts ranging from \$8 to \$100 a month. Report of Pennsylvania Institution, 1909, p. 22. In New Jersey the proportion has been 5.3 per cent.

² See *post*, p. 636.

³ Laws, 1921, ch. 207; 1928, ch. 167; Comp. Stat., Supp., 1930, p. 1358.

⁴ Laws, 1923, ch. 244; 1928, ch. 605; Cons. Laws, 1930, pp. 1486, 2789.

⁵ The amount has been \$96 in South Carolina; \$100 in Alabama, Arkansas, Georgia, and Texas; \$120 in North Carolina; \$125 in Mississippi; \$150 in Florida and Virginia; and \$300 in Tennessee. Sometimes similar allowances have been made to widows of veterans.

⁶ Art. VII., sec. 1.

⁷ This is known as the Harris Fund, amounting to \$80,000, in the hands of Perkins Institution, one-third being available for pension purposes, with preference for aged blind persons living in Charlestown. See *Charities Review*, x., 1901, p. 582.

⁸ See *post*, p. 618.

CHAPTER XLIX

INDEMNITIES PAID FOR LOSS OF SIGHT: THROUGH SUITS AT LAW

OFFER OF PAYMENT OF INDEMNITY ON LOSS OF SIGHT AS MEANS OF EXTENDING RELIEF TO BLIND, AND IN LIEU OF OTHER MEASURES

The extension of pecuniary aid to blind persons in payments at stated intervals, merely as a measure of relief demanded by the existence in society of a number of persons so disabled, and without regard to the manner or the occasion of the occurrence of the affliction, constitutes, as we have seen, the pension system. But it is possible that in many cases such tender may be effected according to very different principles, and on a very different basis. This is through the allowance of indemnities *for the loss of sight*; that is, compensation may be afforded in direct consequence of the deprivation of the sense of vision, and entirely in connection with the event that gave rise to it. There is thus provided an award or indemnity, whether proffered in a single sum at the moment or in subsequent periodical installments, for the disability or misfortune, and one that is to be regarded as taking the place of all other forms of relief.

The plan of indemnification for the loss of sight appears to be one proper and acceptable, from every point of view, for the material assistance of the blind. In it there is presented a quite satisfactory substitute for the pension, with scarcely any of its objectionable features. The greatest merit of the indemnification plan, however, lies in the positive good which it may do in calling attention to and emphasizing the matter of the prevention of blindness. In the premium which it thus puts on the protection of the sight, both on the part of the individual and on the part of society, it may accomplish results of the highest importance, and not possible by any other means.

The plan contains, in fact, what may be accounted the one really scientific solution of the problem of relief to the sightless, so far as such a solution is to be had. It may be regarded, not merely as a new way of treating the problem, but as the opening up of a sound and effective policy of dealing with it. It may be that the working out of anything like a complete program is to be reserved for the future, perhaps one not now near at hand; but with our interest in something

on the order of social insurance in its several phases at present on the increase, we have in the granting of indemnity for the loss of sight, while but a part of the full procedure in respect to the matter, the one generally commendable method of meeting the situation occasioned by the occurrence of blindness in society.

With the loss of sight thus looked upon, there would seem to be no further call for a system of pensions or other form of material assistance for the blind, there being provided a proper and full substitute. On the plan, however, there is imposed, as we have previously noted, a very serious restriction. This lies in the fact that it can now affect but a very small portion of the existing blind population, not reaching the great number already in such a state. Even when adopted on a comprehensive scale, it will have to apply largely to the future. For the blind now found among us for whom no provision was made on the befalling of their affliction, it may not be availed of. In respect to them we are left for the present only with the possibility of resort to other measures.

The indemnities to be afforded for the loss of sight may assume several forms. With them all there has been practical experience to a greater or less extent; and there is thus little that is actually new to be set before us, though relation to the question of the occasioning of blindness has as yet been appreciated in but inconsiderable degree. The first form is through suits at law against the party to be held legally liable for the injury to the sight. The next form is through personal insurance against the loss of vision, as effected by means of different agencies. The third form is through measures of a public nature, either as a direct public allowance, or with public assistance or under public compulsion, the latter of which finds expression in laws directing compensation for injured workmen. Each of these forms will be duly examined.¹

PRINCIPLES OF LAW GOVERNING SUITS FOR RECOVERY

Practically always under the common law it has been possible for an action to be brought to recover compensatory damages against a person who, by acts of commission or of omission, by his deliberate misconduct or by his culpable laches, has caused the destruction of sight in one or both eyes. This proceeds from the all-embracing legal principle that an action in tort, or *ex delictu*, lies against one inflicting personal injuries, where the injured party is blameless, and the party responsible for the injury has acted maliciously, or, in the absence of malice or intentional wrong-doing, with reckless disregard of the con-

¹ In these chapters consideration is called for in respect to injuries to the sight of one eye, as well as in respect to injuries to that of both.

sequences of his deeds, or without the exercise of the care and caution which the situation has demanded, and which was to be expected of an ordinarily and reasonably prudent man. All come under the general law of negligence, suits for the impairment or loss of vision being simply illustrations of its various aspects. Such actions may be divided into three groups: actions against individuals; actions against corporations not employers; and actions against employers.

ILLUSTRATIONS IN ACTIONS AGAINST INDIVIDUALS

Actions may be brought against individuals for harm done to the sight from various causes. Where this results from malicious assault, recovery is hardly to be questioned.¹ Eyes may also be injured through the accidental discharge of firearms; and if the person employing the weapon has been negligent, he may be held to damages.² If the shooting happens to be particularly wanton and shows gross negligence, even though the consequences are not intended, recovery is all the more certain.³ This may also be true with respect to the leaving of explosives exposed, especially when liable to be handled by children.⁴ Similarly, a person receiving injury to the eye through reckless driving by another has a right of action.⁵

On the other hand, if the injured person has himself been negligent, or has had part in illegal proceedings, the law will not come to his aid, and he is left without remedy.⁶ Likewise in accidents resulting from play or sport, recovery is generally allowable only when negligence can be proved on the part of some one.⁷

Another class of cases showing the application of the law of negligence to injuries to the eye is that involving suits for damages as a result of alleged improper medical treatment of this organ. Here the rule prevails that a person putting himself in the hands of physicians or surgeons may expect all the knowledge, experience, and skill belonging to members of the profession in good standing found in the general locality; and that for any want of due care and attention he may hold

¹ *Orscheln v. Scott*, 106 Mo. App., 583, 80 S. W., 982 (1904).

² *Harrison v. Allen*, 179 Ill. App., 520 (1913); *Benegam v. Plassan*, 15 La., 703 (1860).

³ *Selzer v. Saxton*, 71 Ill. App., 229 (1896).

⁴ *Vallency v. Rigillo*, 91 N. J. L., 43, 102 Atl., 348, 17 N. C. C. A., 414 (1917).

⁵ *Shinkle v. McCullough*, 116 Ky., 960, 25 Ky. Law Rep., 1143, 77 S. W., 196, 105 Am. St. Rep., 249 (1903); *Ware v. Lamar*, 18 Ga. App., 673, 90 S. E., 364 (1916); *Keefe v. Lee*, 197 N. Y., 68, 90 N. E., 344, 27 L. R. A., 837 (1908); *Cerami v. Zimmerman*, 8 N. J. Misc., 24, 148 Atl., 154 (1929); *Katz v. Helbing* (Cal.), 10 Pac., 1001 (1932); *Gambrel v. Duen-sing* (Cal. App.), 16 Pac., 284 (1932); *Lee v. Pierce*, 112 Okla., 212, 239 Pac., 989, 24 N. C. C. A., 980 (1925); *Landry v. Hubert*, 100 Vt., 268, 137 Atl., 97 (1927).

⁶ *Fristoe v. Boedecker*, 194 Ill. App., 52, 11 N. C. C. A., 611 (1915).

⁷ *Briese v. Maechtle*, 146 Wis., 89, 130 N. W., 893, 1 N. C. C. A., 769 (1911); *Toohey v. Webster*, 97 N. J. L., 545, 117 Atl., 838, 23 A. L. R., 440 (1922); *Biskup v. Hoffman*, 220 Mo. App., 542, 287 S. W., 865 (1926).

them responsible.¹ But it is a principle no less important that the negligence complained of must be fully established.² Demands of similar tenor are made of nurses and others holding themselves out in a professional capacity;³ and even of druggists with respect to their filling of prescriptions.⁴

ILLUSTRATIONS IN ACTIONS AGAINST CORPORATIONS OTHER THAN EMPLOYERS

Against corporations no less than against individuals, in the matter of injuries to the eye, the law of negligence finds illustration—and in far more frequent instances. Actions may be brought against corporations for ocular accidents caused in various ways. Suits of this character fall into two general divisions. The first includes suits against a corporation as an entity on exactly the same principles as suits against an individual whose negligence is responsible for damage to the sight. The second includes suits where the injury is to one employed by a corporation to perform labor for it, and arising out of or in the course of such employment. The latter class of cases is comprehended in the great law of master and servant, the negligence of the former in respect to the latter constituting one of its most important departments. This relation does not exist solely between an individual employee and a corporation employer, for an individual may, and in fact often is, an employer, to whom the same principles apply; but today in the great majority of cases the employer is a corporation.

In suits against corporations involving no elements of the law of master and servant, the most numerous are those against railway corporations or other common carriers in connection with their operation of trains or cars. Injuries giving rise to such suits are of two kinds: injuries to persons having the status of passengers, in respect to whose safety a peculiar duty is owed; and injuries to persons who are not passengers, and who may bring action on the general ground of tort.

In the transportation of passengers the law requires that a carrier exercise the utmost skill and care in providing for their protection, so far as it is in its power. This includes protection from dangerous

¹ *James v. Robertson*, 39 Utah, 414, 117 Pac., 1068, 2 N. C. C. A., 782 (1911); *Thompson v. Martin*, 127 Mo. App., 34, 106 S. W., 535 (1907) (loss of sight in one eye and impairment of that in other from dropping of corrosive sublimate undiluted into them, in treatment for ulcerated and granulated condition); *Rann v. Twitchell*, 82 Vt., 79, 71 Atl., 1045, 20 L. R. A., 1030 (1906); *McMurdock v. Kimberlin*, 23 Mo. App., 523 (1886).

² *Feeney v. Spalding*, 89 Me., 111, 35 Atl., 1027 (1896); *Stern v. Lannig*, 106 La., 738, 31 So., 303 (1902).

³ *Stanley v. Schumpert*, 117 La., 255, 41 So., 565, 6 L. R. A., 306, 116 Am. St. Rep., 202, 8 Ann. Cas., 1044 (1906) (blindness alleged to result from administration in a sanitarium upon eyes of undiluted alcohol); *Lemoine v. Sullivan*, 98 Ark., 609, 13 S. W., 946 (1911).

⁴ *Burgess v. Sims Drug Co.*, 114 Iowa, 275, 86 N. W., 307, 54 L. R. A., 364, 10 Am. Neg. Rep., 42 (1901).

apparatus or appliances, or from their careless handling.¹ It includes also protection from the assaults of servants, even though due to personal malice on the part of the latter, and not arising from or in the course of their employment, it being presumed that only competent servants are engaged.² For injuries received in wrecks or in other accidents to trains, including collisions with vehicles or trains of other lines, damages may no less be claimed.³ Similarly, passengers are to have sufficient time to board and alight from trains.⁴ The obligations imposed on carriers even extend to the furnishing of safe appurtenances and surroundings at their stations, at which one is entitled to the same consideration that he is on trains;⁵ and to protection as well from particles or missiles from trains, whether discharged from the track or from the cars.⁶ No less embraced are motor vehicles.

To persons not passengers railway corporations may respond in

¹ *Missouri, K. & T. Ry. Co. v. Flood* (Tex. Civ. App.), 70 S. W., 331 (1902) (sight of one eye destroyed and that of other impaired from entrance of red hot cinder); *Palmer v. Delaware & H. Canal Co.*, 11 N. Y. Sup. Ct., 100, 46 Hun, 486, 30 N. Y. St. Rep. 817, 32 N. Y. St. Rep., 872 (1887); *Trinity & B. V. Ry. Co. v. MacDowell* (Tex. Civ. App.), 160 S. W., 984 (1913); *Coolidge v. La Crosse City Ry. Co.*, 136 Wis., 356, 117 N. W., 818 (1908); *Schuler v. Third Avenue R. Co.*, 17 N. Y. Supp., 834 (1892); *Missouri, K. & T. Ry. Co. v. Huff* (Tex. Civ. App.), 32 S. W., 551 (1895); *Korzib v. Netherlands American Steamship Co.*, 175 Fed., 998 (1910); *Tinney v. New Jersey Steamboat Co.*, 12 Abb. Pr. (N. Y.), 1 (1872); *Hughes v. Pullman's Palace Car Co.*, 74 Fed., 499, 10 Am. Neg. Cas., 689 (1896); *Teche Lines v. Baleman*, 162 Miss., 404, 139 So., 159 (1932); *Brevard v. New Orleans Transfer Co.*, 10 La. App., 772, 123 So., 187 (1930); *Chappell v. United Electric Railways Co.*, 51 R. I., 148, 152 Atl., 738 (1930); *Hughes v. Gregory Bus Lines*, 157 Miss., 374, 128 So., 96 (1930); *Shine v. N. Y., N. H. & H. R. R.*, 236 Mass., 419, 128 N. E., 713, 20 N. C. C. A., 280 (1920); *Sommerfield v. Chicago, N. S. & M. R. R.*, 173 Wis., 191, 180 N. W., 847 (1921).

² *Galveston, H. & S. A. Ry. Co. v. Bean*, 45 Tex. Civ. App., 52, 99 S. W., 721 (1907); *Sherley v. Billings*, 71 Ky., 147, 8 Am. Rep., 451 (1871).

³ *McGrew v. Chicago & Milwaukee Electric R. Co.*, 142 Ill. App., 210 (1908); *Dunn v. Burlington, C. R. & N. Ry. Co.*, 35 Minn., 73, 27 N. W., 448 (1886); *Beave v. St. Louis Transit Co.*, 212 Mo., 331, 111 S. W., 52 (1908); *Jewell v. Union Passenger Ry. Co.*, 40 Leg. Int. (Pa.), 36 (1883); *Hueltner v. Minneapolis, St. P., R. & D. Electric Traction Co.*, 133 Minn., 368, 158 N. W., 611 (1916); *Louisville Ry. Co. v. Ellerhorst*, 129 Ky., 142, 110 S. W., 823 (1908).

⁴ *O'Neill v. Metropolitan Street Ry. Co.*, 103 App. D., 607, 93 N. Y. Supp., 145 (1905); (elderly woman made blind in being thrown from street car in alighting as it started); *San Antonio Traction Co. v. Corley* (Tex. Civ. App.), 154 S. W., 621 (1913); *Hunt v. St. Paul City Ry. Co.*, 89 Minn., 448, 95 N. W., 312 (1903); *Simpson v. Peoria Ry. Co.*, 179 Ill. App., 307 (1913); *Georgia Pacific Ry. Co. v. Hudson*, 89 Ga., 558, 16 S. E., 70 (1892); *International & G. N. Ry. Co. v. Copeland*, 60 Tex., 325, 6 Am. Neg. Cas., 504 (1883); *Louisville & N. R. Co. v. Roberts*, 187 Ky., 192, 218 S. W., 713 (1920); *Missouri, K. & T. Ry. Co. v. Orton*, 67 Kans., 848, 73 Pac., 63, 14 Am. Neg. Rep., 548 (1903); *Provance v. Missouri Southern R. Co.* (Mo. App.), 186 S. W., 955 (1916); *Richards v. Illinois Central R. Co.*, 107 Ill. App., 282 (1915).

⁵ *Chesapeake & O. R. Co. v. Honley*, 155 Ky., 447, 159 S. W., 1147 (1913); *Illinois Central R. Co. v. Treat*, 75 Ill. App., 326 (1898); *Gulf, H. & S. A. Ry. Co. v. Watts* (Tex. Civ. App.), 182 S. W., 412 (1916); *Texas & P. Ry. Co. v. Bowlin*, 11 Tex. Civ. App., 271, 32 S. W., 918, 8 Am. Neg. Cas., 638 (1895).

⁶ *Shaw v. Chicago & G. T. Ry. Co.*, 123 Mich., 629, 82 N. W., 618, 49 L. R. A., 308, 81 Am. St. Rep., 230 (1900); *Kansas City Southern Ry. Co. v. Willsie*, 224 Fed., 908, 10 N. C. C. A., 700 (1915) (sight of one eye destroyed and that of other impaired in passenger at station from fragment of torpedo placed on track); *Davis v. Boston Elevated Ry. Co.*, 222 Mass., 475, 111 N. E., 174, 12 N. C. C. A., 673 (1916).

damages on the principles laid down in general suits for personal injuries, with general liability for their negligent acts, but usually with the exception of such as are not to be foreseen. Such injuries may be brought about in several ways by moving trains or cars. A party may be struck directly in his person;¹ or the vehicle in which he is riding may be run into.² Missiles, including fragments from explosions, thrown from passing trains may fly at one;³ or there may be contact with electrical appliances carelessly set up or attended to.⁴

Besides railway corporations, there are corporations of divers other kinds—including also firms and associations, and even individuals conducting business undertakings not strictly in a single capacity—against which actions are possible at law to recover for injuries affecting the sight. First may perhaps be mentioned public service corporations other than carriers, especially telegraph and telephone companies, which are permitted to use the public ways. The chief source of danger lies in the leaving of unguarded holes in, or in the permitting of wires, especially when charged, to fall over, public thoroughfares.⁵ Obstructions in public ways causing injury may sometimes be laid at the doors of construction companies doing work therein.⁶ Even municipal corporations negligent in allowing encumbrances to be placed on streets or sidewalks may be required to answer in damages to travelers who, without fault of their own, suffer injury in consequence thereof.⁷

¹ *West Chicago Street R. Co. v. McCallum*, 169 Ill., 240, 48 N. E., 424 (1897); *New Jersey Railroad & Transportation Co. v. West*, 32 N. J. L., 91, 12 Am. Neg. Cas., 276 (1866); *Stewart v. Long Island R. Co.*, 54 App. D., 623, 66 N. Y. Supp., 436 (1901); *Katz v. Helbing* (Cal. App.), 1 Pac. (2), 1076 (1931).

² *Dallas & G. Ry. Co. v. Able*, 72 Tex., 150, 9 S. W., 871 (1888); *Hitz v. Pittsburgh & B. Street Ry. Co.*, 245 Pa. 7, 91 Atl., 215 (1914); *Illinois Central R. Co. v. Morris*, 28 Ky. Law Rep., 956, 90 S. W., 969 (1906); *Louisville, H. & St. L. Ry. Co. v. McDonald*, 33 Ky. Law Rep., 762, 111 S. W., 289 (1908).

³ *Tatman v. Philadelphia, B. & W. R. Co.*, 10 Del., 105, 85 Atl., 716 (1913); *Wiedmer v. New York Elevated R. Co.*, 114 N. Y., 462, 21 N. E., 1041 (1889); *Carney v. Boston Elevated Ry. Co.*, 212 Mass., 179, 98 N. E., 605, 42 L. R. A., 90 (1912); *Flaherty v. Boston Elevated Ry. Co.*, 235 Mass., 422, 126 N. E., 798 (1920).

⁴ *Clare v. Sacramento Electric Power & L. Co.*, 122 Cal., 504, 55 Pac., 326 (1898); *Hoxsey v. St. Louis & S. Ry. Co.*, 184 Ill. App., 410 (1913); *Chittick v. Philadelphia Rapid Transit Co.*, 224 Pa., 13, 73 Atl., 4, 22 L. R. A., 1073 (1909).

⁵ *Perkins v. Sunset Telegraph & Telephone Co.*, 155 Cal., 712, 103 Pac., 190 (1909); *Claussen v. Cumberland Telephone & Telegraph Co.*, 126 La., 1087, 53 So., 357 (1910); *Rollins v. Central Maine Power Co.*, 112 Me., 175, 91 Atl., 837 (1914); *Smith v. Day*, 136 Fed., 964 (1905); *Southern Telephone & Telegraph Co. v. Evans*, 54 Tex. Civ. App., 63, 116 S. W., 418 (1909); *Godfrey v. Kansas City Light & P. Co.*, 299 Mo., 472, 253 S. W., 233 (1923) (injury to sight of boy in tree gathering walnuts from contact with electric wire).

⁶ *Phelan v. Granite Bituminous Paving Co.*, 227 Mo., 666, 127 S. W., 318, 137 Am. St. Rep., 582 (1910).

⁷ *City of East St. Louis v. Dougherty*, 74 Ill. App., 490 (1897); *City of Louisville v. Keher*, 117 Ky., 841, 9 S. W., 270 (1904); *Place v. City of Yonkers*, 43 App. D., 380, 60 N. Y. Supp., 171, 6 Am. Neg. Rep., 641 (1899); *Frank v. Village of Warsaw*, 198 N. Y., 463, 92 N. E., 17, 1 N. C. C. A., 917 (1910) (blindness from explosion of peanut roaster); *Horton v. City of Seattle*, 53 Wash., 316, 101 Pac., 1091 (1909); *Indiana Natural & Illuminating Gas Co. v. McMath*, 26 Ind. App., 154, 57 N. E., 593, 59 N. E., 287 (1900); *Stemmler v. City of*

Among remaining corporations there are various examples of actionable wrongs, which have their origin in injuries to the eye. For the careless driving of vehicles belonging to them, corporations may be made to answer just as individuals.¹ In the disposition of high explosives the utmost precautions are insisted upon; and no excuses are accepted for their being left in exposed places, especially when children may be attracted by them and attempt to handle them.² Dealers in such explosives, moreover, are bound to know their character, and are responsible for representations made respecting them.³

Of customers in stores, of workmen called into buildings for repair or other work, of students in educational institutions (except so far as the exemption in behalf of charitable and like institutions may apply), and of invitees in general to the premises of another, the safety must be assured, with the affording of surroundings free from danger.⁴ Persons in their homes or places of business must likewise be protected when construction or repair work is going on near-by.⁵

ILLUSTRATIONS IN ACTIONS AGAINST EMPLOYERS

From actions against corporations for injuries of a private or personal character which we have examined, we pass to actions against corporations for injuries occurring in industrial employment and arising in connection therewith—actions of much greater importance numerically, and perhaps otherwise. Here we touch upon one of the great departments of the law, namely, the relationship of master and servant. In it the law of negligence as such may be said to have

Pittsburgh, 287 Pa., 365, 135 Atl., 100, 49 A. L. R., 1227 (1926); *City of Pawhuska v. Crutchfield*, 147 Okla., 4, 293 Pac., 1095 (1930).

¹ *Van Camp Hardware & Iron Co. v. O'Brien*, 28 Ind. App., 152, 62 N. E., 464 (1902); *Palmer Transfer Co. v. Eaves*, 27 Ky. Law Rep., 573, 85 S. W., 750 (1905).

² *Barnett v. Cliffside Mills*, 167 N. C., 576, 83 S. E., 826 (1914); *Gralka v. Worth Bros. Co.*, 245 Pa., 467, 91 Atl., 860 (1914); *S. W. Cotton Co. v. Clements*, 25 Ariz., 124, 213 Pac., 1005 (1923); *Peterson v. Martin*, 138 Minn., 195, 164 N. W., 813 (1917).

³ *Bosserman v. Smith*, 205 Mo. App., 657, 226 S. W., 608 (1920) (explosion from fireworks sold to child erroneously informed as to their nature); *Marsh v. Usk Hardware Co.*, 73 Wash., 543, 132 Pac., 241 (1913); *Cashwell v. Fayetteville Pepsi-Cola Bottling Co.*, 174 N. C., 324, 93 S. E., 901 (1917); *Bluegrass Fair Association v. Bushnell*, 206 Ky., 462, 267 S. W., 237, 24 N. C. C. A., 156 (1924) (fireworks exhibition).

⁴ *Quirck v. Siegel Cooper Co.*, 43 App. D., 464, 60 N. Y. Supp., 228, 7 Am. Neg. Rep., 644 (1899); *Merrill v. Los Angeles Gas & E. Co.*, 158 Cal., 499, 111 Pac., 534, 139 Am. St. Rep., 134, 31 L. R. A., 559 (1910); *Szasz v. Joyland Co.*, 84 Cal. App., 259, 257 Pac., 871 (1927); *Fleckensein v. Great Atlantic & P. Tea Co.*, 91 N. J. L., 145, 102 Atl., 700, 17 N. C. C. A., 439, L. R. A., 1918C (1917); *Kellogg v. Church Charity Foundation of Long Island*, 203 N. Y., 191, 96 N. E., 406, 3 N. C. C. A., 444 (1911); *Parks v. Northwestern University*, 121 Ill. App., 512, 218 Ill., 381, 75 N. E., 991, 2 L. R. A., 556, 4 Ann. Cas., 103 (1905); *Maede v. Oakland High School District* (Cal. App.), 291 Pac., 874 (1930); *Derrick v. Portland Eye, Ear, Nose, and Throat Hospital*, 105 Ore., 90, 209 Pac., 344 (1922); *Winona Technical Institute v. Stolte*, 173 Ind., 39, 80 N. E., 393 (1909); *Castonguay v. Acme Knitting Machine & Needle Co.*, 83 N. H., 1, 136 Atl., 702, 27 N. C. C. A., 609 (1927).

⁵ *Olwell v. Skobis*, 126 Wis., 308, 105 N. W., 777 (1905); *Kesten v. Einhorn & Singer Development Corp.*, 232 App. D., 144, 249 N. Y. Supp., 205 (1931).

been removed from its independent position, and to have assumed a particular province in this greater field, or to have become a part of a special range of the law known as employer's liability.

As with the suits which we have previously considered, personal actions against employers for injuries sustained in the course of work, and chargeable to what is deemed to be negligence on their part, have long been an established principle of common law, affording in fact until late years the one basis upon which damages might be recovered. Because, however, of the usual relative weakness of the injured party, due in the main to his financial inability to prosecute a suit, with its frequent protracted litigation, the law has taken cognizance of the situation, and has in greater or less measure come to his aid, both by legislation and by court decisions. To do this, it has modified the rules grown up in the common law which affect the conduct of such actions, limiting or abrogating in certain particulars what had been regarded as the employer's defenses. These are known as the doctrines of assumed risk, contributory negligence, and negligence of fellow servants. Besides the increasing liberality of the courts towards injured employees in applying these defenses, there have been enacted in most of the States of the Union statutes expressly modifying them in varying degree in respect to some or all employments, in certain ones being all but abandoned.

As the law has generally stood up to very recent times, the principles governing the relationship of employer and employee, or of master and servant, have been rather clear and definite. Though the employer may not be regarded as the insurer of the safety of his employees, he is to exercise reasonable care and diligence in providing safe places and surroundings for their work, in respect to which he has knowledge or may reasonably be expected to have knowledge; and he may not delegate such duty. He is to provide plants, machinery, ways, works, tools, and appliances which may fairly be presumed to be free from danger, and is, by due inspection, to see that they remain so. He is not required to furnish the most recent or the most costly devices to be found upon the market, but only those which are generally used by ordinarily prudent employers in the same lines of business. If his attention is called to any defect or improper construction constituting an element of insecurity, it is his duty to repair it promptly; and the employee does not assume any risk by continuing at work on the strength of this expectation unless it is plain that the matter has not been remedied. Nor is there upon the latter such an assumption if he is not made aware of the danger or if the danger is not an obvious one. The employer may be held for latent defects if they are such that he

should have known about. In operations involving special hazard adequate safeguards must be provided, and full protection afforded, the employer in this respect being held to strict account. Towards young and inexperienced persons, and often also towards those at tasks for which they were not engaged, a peculiar duty is owed in the way of giving instruction and warning; and for injuries to them, particularly when the danger is not realized or appreciated, little excuse will be accepted, the defense of contributory negligence in such case bearing very lightly. The employer, moreover, is expected to supply suitable and competent fellow workers, so far as he may be able to judge of their fitness. In addition, the rule of *respondeat superior* prevails, the superintendent or other person having charge of operations in the same general line of employment being regarded as a vice-principal and a representative of the actual employer, and the latter thus being made fully answerable. Finally, the failure to furnish the safeguards which the law is coming more and more particularly to direct, or the violation of general statutory provisions, is considered to aggravate an offense and to preclude exculpation.

To all these demands upon the employer there are, however, certain limitations. There may arise situations in which he may to a greater or less extent avoid liability. Though he is generally responsible for the furnishing of safe tools and appliances to his workmen, there is a limitation to his duty in this respect. Blame does not attach for defects which are invisible or latent, or which are not discoverable by inspection; nor for the providing of devices which are deemed to be ordinarily safe or which are in general use in his locality, the best on the market not being expected of him. Similarly, though usually chargeable for the orders issued by foremen or superiors, he may disclaim accountability when these are out of keeping with their authority or with the line of their employment. Lastly, he may escape responsibility for accidents in which no connection with his obligations can be established, or in which his fault is not to be taken as the certain and proximate cause; or for accidents of extraordinary character, or ones altogether unforeseen, and for which no provision could have been made, or ones involving negligence on the part of no one, or for accidents which may be regarded as such pure and simple.

The defenses which the employer has been permitted to interpose in actions by injured employees are few in number, but very important in the esteem of courts. The first, the doctrine of the assumption of risk, has been allowed to cover a multitude of matters. If, for example, an employee avails himself of a tool or appliance which is obviously defective or unsuited for the purpose in hand, or the condition of which

he knows or should know, or which is open to reasonable inspection; or if he fails to judge the fitness of small and common tools, requiring little special skill in their handling and necessitating but slight inspection from the employer; or if he engages in an undertaking involving a danger such as he should recognize; or if, where a safe method of doing work is possible, he employs an unsafe one; or if, though aware of the existence of better devices, he remains content with inferior ones; or if with good tools within range, or if familiar with the location of such, he selects bad ones; or if well acquainted with the workings of his tools and appliances, he has occasion to detect an imperfection therein, and yet makes no complaint with respect thereto; or if, after making complaint, he continues in their use when it is apparent that no repair has been effected; or if, being in doubt as to their reasonable safety, and without attempt to assure himself, he goes ahead with them notwithstanding; or if, without objection, he sets about work different from that for which he has been engaged; or if, though an experienced worker, he elects to labor in a poorly lighted or otherwise unsatisfactory place—in all such cases the employee may be regarded as having assumed the risk of injury, and in consequence is not entitled to recover from the employer.

The second defense is that of contributory negligence on the part of the employee in the causation of his injury. This partakes in considerable measure of the defense of assumed risk, shading into it in not a few particulars. It depends largely on whether failure to exercise reasonable care, or the care which the circumstances demand, may be imputed to the employee—as in plain recklessness; or in direct carelessness; or in remissly incurring obvious danger; or in omitting to employ proper safeguards, or to examine tools before using, or to look about before setting at an undertaking; or in declining to procure a safe device close at hand and employing an unsafe one; or in otherwise showing himself wanting in due prudence or circumspection in the performance of his task. In such case the employee is looked upon as sharing the blame for the injury befalling him, and hence is barred from recovery.

The third defense is comprehended in the fellow servant doctrine, the principle held forth being that the employer is not to be regarded as responsible for injuries which may be laid to the fault of coemployees, unless the unfitness of such has been made manifest.

Illustrations of all the foregoing principles are found in abundant and various instances in the prosecution of suits for injuries to the eye arising in the course of employment. In the matter of the initial demands of the law for safe surroundings, we have multiform examples.

Here again attention may first be directed to accidents occurring in the operation of railway trains or cars. Accidents to the eye are of frequent happening to persons employed in the construction and maintenance of roadbeds, especially to section or track hands. Not a few of these are induced by the use of defective hammers, mauls, crowbars, cold chisels, etc., in driving or pulling spikes, or in cutting rails, whereby chips or particles broken off are caused to fly up and strike the eye;¹ while others are brought on in connection with different forms of repair work on the right of way, as well as by the throwing off of missiles by passing trains.² To train crews who have in charge the actual operation of trains there is no less danger. This may result from improper or defective equipment of the rolling stock, as in the failure to provide suitable protection for glass gauges on locomotives;³ or in the furnishing of unfit appliances on cars.⁴ To them there is also liability to injury from the faulty operation of trains,⁵ from the handling of dangerous substances,⁶ or from defects in the construction of the road itself.⁷ For injuries to employees from collisions or other

¹ *Johnson v. Missouri Pacific Ry. Co.*, 96 Mo., 340, 9 S. W., 790, 9 Am. St. Rep., 351 (1888); *Dales v. Chicago, B. & Q. R. Co.*, 169 Mo., 183, 152 S. W., 401 (1912); *Allen v. Cincinnati, N. O. & T. P. Ry. Co.*, 143 Ky., 723, 137 S. W., 230 (1911); *Central Railroad & Banking Co. v. Atlaway*, 90 Ga., 656, 16 S. E., 956 (1892); *Georgia Railroad & Banking Co. v. Cosby*, 97 Ga., 209, 22 S. E., 912 (1894); *Haire v. Schaff* (Mo. App.), 190 S. W., 56 (1916); *Hermanek v. Chicago & N. W. Ry. Co.*, 108 C. C. A., 254, 186 Fed., 142 (1911); *Pope v. St. Louis S. W. Ry. Co.*, 106 Tex., 52, 155 S. W., 1175 (1913); *Hankinson v. Charleston & W. Ry. Co.*, 94 S. C., 150, 77 S. E., 863 (1912); *Ives v. United States*, 58 Fed. (2), 201 (1930); *New York, N. H. & H. R. Co. v. Vizvari*, 126 C. C. A., 632, 210 Fed., 118 (1913); *Pittsburgh, C., C. & St. L. Ry. Co. v. Cole*, 260 Fed., 379, 19 N. C. C. A., 559 (1919).

² *Gekas v. Oregon-Washington R. & N. Co.*, 75 Ore., 243, 146 Pac., 970, 8 N. C. C. A., 386 (1915); *Pollock v. Houston & T. C. Ry. Co.*, 103 Tex., 69, 123 S. W., 408 (1908); *Lexington & E. Ry. Co. v. Fields*, 152 Ky., 19, 153 S. W., 43, 4 N. C. C. A., 51 (1913); *Falvai v. Calumet & S. C. Ry. Co.*, 177 Ill. App., 125 (1913) (loss of sight in both eyes from explosion of ladle of molten metal poured on snow); *Louisville & N. R. Co. v. Long*, 172 Ky., 436, 189 S. W., 435 (1916).

³ *Stafford v. Maine Central R. Co.*, 94 Me., 178, 47 Atl., 148, 8 Am. Neg. Rep., 431 (1900); *Chicago & N. W. Ry. Co. v. Bower*, 96 Neb., 419, 148 N. W., 145, 241 U. S., 470, 36 Sup. Ct. Rep., 624 (1914); *Chicago, R. I. & P. Ry. Co. v. De Vore*, 43 Okla., 534, 143 Pac., 864 (1914); *St. Louis, I. M. & S. Ry. Co. v. Swaim*, 105 Ark., 224, 150 S. W., 861 (1912); *Seaboard Air Line R. Co. v. Horton*, 239 U. S., 595, 36 Sup. Ct. Rep., 180 (1915); *Gordon v. Northern Pacific R. Co.*, 39 Mont., 571, 104 Pac., 679, 18 Ann. Cas., 583 (1909).

⁴ *Denver, T. & Ft. W. R. Co. v. Smock*, 23 Col., 456, 48 Pac., 681, 2 Am. Neg. Rep., 305 (1897); *Sabine & E. T. Ry. Co. v. Ewing*, 7 Tex. Civ. App., 8, 26 S. W., 638 (1894); *Galveston, H. & S. A. Ry. Co. v. Harris* (Tex. Civ. App.), 172 S. W., 1129 (1915); *Freeman v. Morrow* (Tex. Civ. App.), 156 S. W., 284 (1913); *Credar v. St. Louis & S. F. R. Co.*, 181 Mo. App., 526, 164 S. W., 678 (1914); *Galveston, H. & S. A. Ry. Co. v. Sanchez*, 57 Tex. Civ. App., 87, 122 S. W., 44 (1909).

⁵ *Alchison, T. & S. F. Ry. Co. v. Hargrave* (Tex. Civ. App.), 177 S. W., 509 (1915); *Cook v. Missouri Pacific Ry. Co.*, 94 Mo. App., 417, 68 S. W., 230 (1902); *Wiggins v. Missouri-Kansas-Louisiana R. Co.*, 128 Kans., 32, 276 Pac., 63 (1929); *Blevins v. Union Pacific R. Co.*, 131 Kans., 682, 293 Pac., 519 (1930).

⁶ *Gulf, C. & S. F. Ry. Co. v. Smith* (Tex. Civ. App.), 148 S. W., 820 (1912); *Cunningham v. Chicago, B. & Q. Ry. Co.*, 156 Mo. App., 617, 137 S. W., 600 (1911).

⁷ *Missouri, K. & T. Ry. Co. v. Parker*, 20 Tex. Civ. App., 470, 49 S. W., 717, 50 S. W., 606 (1889); *Commonwealth Electric Co. v. Rooney*, 138 Ill. App., 275 (1907) (loss of sight to lineman on pole with charged wires, having been told they were dead).

wrecks a railroad company is duly held responsible.¹ Such is likewise the case with respect to injuries happening to them while being transported on its lines to or from their accustomed places of work, they being regarded here simply as passengers, and not fellow servants of the train crew;² and with respect to injuries happening while in general promoting its interests.³

A large number of accidents causing the loss or impairment of vision occur in shops, mills, factories, and other establishments, including railway repair shops, in which steel or other hard metals are employed. Here there may fly up chips or slivers broken off in different operations from defective tools, battered, burred, of inferior material, or otherwise unfit, such as hammers, chisels, mauls, punches, dies, boring tools, anvils, rivets, etc., either in the hands of the injured workman or in the hands of a fellow employee.⁴ Similar possibilities exist in construction work of one kind and another, and also in repair

¹ *Houston & T. C. Ry. Co. v. Lowe* (Tex. Civ. App.), 11 S. W., 1065 (1889); *Cobb v. St. Louis & H. Ry. Co.*, 149 Mo. App., 609, 50 S. W., 894 (1899); *Galveston, H. & S. A. Ry. Co. v. Fitzpatrick* (Tex. Civ. App.), 91 S. W., 355 (1906); *Lynch v. Northern Pacific Ry. Co.*, 67 Wash., 113, 120 Pac., 882 (1912); *Haynes v. Maine Central R. Co.*, 108 Me., 243, 80 Atl., 38 (1911).

² *Jachetta v. San Pedro, L. A. & S. L. R. Co.*, 36 Utah, 470, 105 Pac., 100, 52 L. R. A., 1106 (1900); *Jones v. St. Louis S. W. Ry. Co.*, 125 Mo., 666, 28 S. W., 883, 46 Am. St. Rep., 514, 26 L. R. A., 718 (1894); *St. Louis S. W. Ry. Co. v. Brothers* (Tex. Civ. App.), 165 S. W., 488 (1914); *Southern Pacific R. Co. v. Cavin*, 75 C. C. A., 350, 144 Fed., 348 (1906); *Missouri, K. & T. Ry. Co. v. Edmonds* (Okla.), 174 Pac., 1052 (1918).

³ *St. Louis, I. M. & S. R. Co. v. Grant*, 75 Ark., 579, 88 S. W., 580 (1905).

⁴ *Whitelaw v. Memphis & C. R. Co.*, 84 Tenn., 391, 1 S. W., 37 (1886); *Herricks v. Chicago & E. I. R. Co.*, 180 Ill. App., 565 (1913); *Famous Mfg. Co. v. Harmon*, 28 Ind. App., 117, 62 N. E., 306 (1901); *Hocking v. Windsor Spring Co.*, 131 Wis., 532, 111 N. W., 685 (1907); *Harvey v. Rome Scale & Mfg. Co.*, 13 Ga. App., 571, 79 S. E., 487 (1913); *Sterling v. Parker-Washington Co.*, 185 Mo. App., 192, 170 S. W., 1156 (1914); *Freeman v. Star* (Tex. Civ. App.), 138 S. W., 1150 (1911); *Buchanan v. Gilder & Blanchard*, 59 Tex. Civ. App., 477, 127 S. W. 1153 (1910); *St. Louis, S. F. & T. Ry. Co. v. Jenkins* (Tex. Civ. App.), 137 S. W., 711 (1911); *Ruck v. Chicago, M. & St. P. Ry. Co.*, 153 Wis., 158, 140 N. W., 1074 (1913); *Young v. Champion Fiber Co.*, 159 N. C., 375, 74 S. E., 1051 (1912); *Lyberg v. Northern Pacific R. Co.*, 39 Minn., 15, 38 N. W., 632 (1888); *Cashmere v. Peerless Motor Car Co.*, 154 App. D., 814, 139 N. Y. Supp., 359 (1913); *Jorkiewicz v. American Brake Co.*, 186 Mo. App., 534, 172 S. W., 441 (1915); *Republic Iron & Steel Co. v. Ohler*, 161 Ind., 393, 68 N. E., 901 (1903); *Flick v. Globe Mfg. Co.*, 172 Iowa, 561, 154 N. W., 928 (1915); *Tuohy v. Columbia Steel Co.*, 61 Ore., 527, 122 Pac., 36 (1912); *Hines v. Waltham Mfg. Co.*, 208 Mass., 282, 94 N. E., 464 (1911); *Potvin v. West Bay City Shipbuilding Co.*, 156 Mich., 201, 120 N. W., 613 (1909); *Blankenship v. Hughes Paint & Glass Co.*, 154 Mo. App., 483, 135 S. W., 970 (1911); *Campbell v. Gillespie Co.*, 69 N. J. L., 279, 55 Atl., 276 (1903); *Middleton v. Baldwin Locomotive Works*, 120 C. C. A., 630, 202 Fed., 497 (1913); *Igo v. Boston Elevated R. Co.*, 204 Mass., 197, 90 N. E., 574 (1910); *Anderson v. Morrinan*, 202 Mass., 193, 88 N. E., 782 (1909); *Louisville & N. R. Co. v. Carter*, 195 Ala., 382, 70 So., 655 (1915); *Middleton v. National Box Co.*, 38 Fed. (2), 89 (1930); *Manning v. Portland Steel Shipbuilding Co.*, 52 Ore., 101, 96 Pac., 545 (1908); *Zuwodnick v. Higgins Spring & Axle Co.*, 151 Wis., 118, 138 N. W., 48 (1912); *Lytton v. Marion Mfg. Co.*, 157 N. C., 331, 72 S. E., 1055, Ann. Cas., 1913C, 358 (1911); *Bertha v. Regal Motor Car Co.*, 180 Mich., 51, 146 N. W., 389, 8 N. C. C. A., 160 (1914); *Hines v. Thurman*, 195 Ky., 394, 242 S. W., 357 (1922); *Cotton Mills Product Co. v. Oliver*, 153 Miss., 362, 121 So. 111 (1929); *Atlantic Coast Line R. Co. v. Wheeler*, 147 Va., 1, 132 S. E., 517 (1926); *Cunningham v. Doe River Lead Co. (Mo.)*, 26 S. W. (2), 957 (1930); *Emerson-Brantingham Co. v. Grove*, 191 Ind., 564, 133 N. E., 919, 21 N. C. C. A., 907 (1922).

work of various descriptions.¹ In operations with emery wheels of grindstones, unless provided with proper safeguards, minute particles of stone or metal are constantly thrown off, some of which may enter the eye.² Not unlike results may occur with unguarded saws in wood-working.³ Small fittings or appliances are likewise liable to be severed or to become loose, and hurled about.⁴ Fragments may be thrown by the bursting of boilers or other parts, or of bottles when heated or under great pressure.⁵ The sight is no less affected by contact with harmful chemical or other substances.⁶ A certain number of injuries are accounted for by the sudden impact of the loose end of broken belts.⁷ Accidents also occur to the eye from the striking of it by various objects.⁸ In mines there reside peculiar perils.⁹ In the use of dangerous materials, especially explosives, there is very great hazard to the eyes.¹⁰ In various industrial processes in which young or inexperienced persons are engaged there is also particular risk.¹¹

¹ *De la Vergne Refrigerator Co. v. Stahl*, 24 Tex. Civ. App., 471, 60 S. W., 319 (1900); *Peifer v. Eastern Metals Works*, 258 Ill., 427, 101 N. E., 548 (1913); *Smith v. City of Rome*, 16 Ga. App., 96, 84 S. E., 734, 9 N. C. C. A., 153 (1915); *Maxwell v. Hannibal & St. J. R. Co.*, 85 Mo., 95 (1884).

² *Drake v. Industrial Works*, 174 Mich., 622, 140 N. W., 933 (1913); *Jenney Electric Mfg. Co. v. Flannery*, 53 Ind. App., 397, 98 N. E., 424 (1912); *Sobeck v. Geo. H. Smith Steel Co.*, 158 Wis., 517, 149 N. W., 152 (1914); *Bartlesville Zinc Co. v. James*, 66 Okla., 24, 166 Pac., 1054 (1917).

³ *Shaver v. J. Neils Lumber Co.*, 109 Minn., 376, 123 N. W., 1076 (1909); *Nelson v. A. H. Stange Co.*, 140 Wis., 657, 123 N. W., 152 (1909); *Smith v. E. W. Backus Lumber Co.*, 64 Minn., 447, 67 N. W., 358 (1896); *Forrest v. Roper Furniture Co.*, 267 Ill., 331, 108 N. E., 338 (1915); *Bradley Lumber Co. v. Tarvin*, 181 Ark., 114, 27 S. W. (2), 520 (1930).

⁴ *Wiley v. Solvay Process Co.*, 215 N. Y., 584, 109 N. E., 606 (1915); *Oakey v. Robb-Mumford Boiler Co.*, 202 Mass., 340, 88 N. E., 892 (1909); *Cormo v. Boston Bridge Works*, 205 Mass., 366, 91 N. E., 313 (1910); *Jaques v. Great Falls Mfg. Co.*, 66 N. H., 482, 22 Atl., 552, 13 L. R. A., 824 (1891); *Gunter v. Graniteville Mfg. Co.*, 18 S. C., 262 (1882); *Quaid v. Cornwall & Bro.*, 76 Ky., 601 (1878); *Law v. Illinois Central R. Co.*, 126 C. C. A., 27, 208 Fed., 869 (1913).

⁵ *Eberls v. Mount Clemens Sugar Co.*, 182 Mich., 449, 148 N. W., 810, 7 N. C. C. A., 52 (1914); *Ruck v. Milwaukee Brewing Co.*, 144 Wis., 404, 129 N. W., 414 (1911); *Ky. Wagon Co. v. Shake*, 137 Ky., 742, 126 S. W., 1095 (1910).

⁶ *Peterson v. Roessler & Hasslacher Chemical Co.*, 131 Fed., 156 (1904); *Whitehead v. Newton Oil & Mfg. Co.*, 105 Miss., 711, 63 So., 219 (1913); *Illinois Steel Co. v. Sitar*, 98 Ill. App., 300, 199 Ill., 116, 64 N. E., 984 (1902).

⁷ *Cummings v. National & Providence Worsted Mills*, 24 R. I., 390, 53 Atl., 280 (1902); *Brossard v. Morgan Co.*, 150 Wis., 1, 136 N. W., 181 (1912); *Johnson v. Pickering Land & Lumber Co.*, 132 La., 425, 61 So., 514 (1913); *Ferguson v. Wheeler Land, Lumber & Handle Co.*, 112 Ark., 260, 165 S. W., 628 (1914).

⁸ *Dudley v. R. P. Hazard Co.*, 112 Me., 453, 92 Atl., 517 (1914); *Chicago Veneer Co. v. Jones*, 143 Ky., 21, 135 S. W., 430 (1911); *Welk v. Jackson Architectural Iron Works*, 98 App. D., 247, 90 N. Y. Supp., 541 (1904).

⁹ *Jenkins v. La Salle County Carbon Coal Co.*, 182 Ill. App., 36 (1913); *Carney v. Marquette Third Vein Coal Co.*, 175 Ill. App., 139, 260 Ill., 220, 103 N. E., 204 (1913); *Kellyville Coal Co. v. Strine*, 117 Ill. App., 115, 217 Ill., 516, 77 N. E., 375 (1905).

¹⁰ *Mather v. Killston*, 156 U. S., 391, 15 Sup. Ct. Rep., 464, 39 L. ed., 464 (1895); *Yurkonis v. Delaware, L. & W. R. Co.*, 213 Fed., 537, 6 N. C. C. A., 210, 880 (1914); *Stearns v. Reidy*, 33 Ill. App., 256, 135 Ill., 119, 25 N. E., 762 (1890); *Cumberland Telephone & Telegraph*

¹¹ *Lobasco v. Moxie Nerve Food Co.*, 127 App. D., 677, 111 N. Y. Supp., 1007 (1908); *Flaherty v. Powers*, 167 Mass., 61, 44 N. E., 1074 (1896); *Zimmerman v. Pryor* (Mo. App.),

Illustrations of the interposition of the several defenses enjoyed by the employer, whereby recovery for injury to the sight is defeated, are in their turn presented. They include the principle of the assumption of risk by the employee in different forms, and in much the most numerous instances; of contributory negligence; and of fellow service.¹

Co. v. Harp, 28 Ky. Law Rep., 909, 90 S. W., 980 (1906); *Hardy v. Chicago, R. I. & P. Ry. Co.*, 149 Iowa, 41, 127 N. W., 1093 (1910); *Trasher & Gunther v. Emke*, 154 Ky., 744, 159 S. W., 565 (1913); *Bane v. Irwin*, 172 Mo., 306, 72 S. W., 522 (1903); *Curreli v. Jackson*, 77 Conn., 115, 58 Atl., 762, 17 Am. Neg. Rep., 22 (1904); *Gillespie v. Great Northern R. Co.*, 124 Minn., 1, 144 N. W., 466 (1913); *Ribach v. Lake Superior Smelting Co.*, 123 Mich., 401, 82 N. W., 279, 48 L. R. A., 649, 81 Am. St. Rep., 215 (1900); *Deep Mining & Drainage Co. v. Fitzgerald*, 21 Col., 533, 43 Pac., 210, 13 Am. Neg. Cas., 615 (1895); *Bagaini v. Donk Bros. Coal & Coke Co.*, 190 Ill. App., 76 (1916).

190 S. W., 26 (1916); *Waters-Pierce Oil Co. v. Snell* (Tex. Civ. App.), 106 S. W., 170 (1907); *Stearns Coal & Lumber Co. v. Tuggle*, 157 Ky., 808, 164 S. W., 74 (1914); *Warnke v. A. Leschen & Sons Rope Co.*, 186 Mo. App., 30, 171 S. W., 643 (1914); *Stearns v. Pine Woods Lumber Co.*, 122 La., 284, 47 So., 607 (1908); *Donley v. Scanlon*, 116 Ind., 8, 17 N. E., 158 (1888); *Georgia, F. & A. Ry. Co. v. Lasseter*, 122 Ga., 679, 51 S. E., 15 (1905); *Van Hul v. Great Northern Ry. Co.*, 90 Minn., 329, 96 N. W., 789, 15 Am. Neg. Rep., 51 (1903); *Phillips v. Hamilton Brown Shoe Co.*, 178 Mo. App., 196, 165 S. W., 1183 (1914); *Lemser v. St. Joseph Mfg. Co.*, 70 Mo. App., 209 (1897); *Harlow v. Western Cartridge Co.*, 179 Ill. App., 515 (1913); *Haley v. Solvay Process Co.*, 127 App. D., 753, 112 N. Y. Supp., 25 (1908); *Brooks v. Kansas Chemical Mfg. Co.*, 94 Kans., 86, 145 Pac., 840 (1915); *Vohs v. Shorthill & Co.*, 130 Iowa, 538, 107 N. W., 417 (1906); *Gummerson v. Kansas City Bolt & Nut Co.*, 185 Mo. App., 7, 171 S. W., 959, 8 N. C. C. A., 907 (1914); *Hauser v. American Smelting & Refining Co.*, 85 N. J. L., 264 (1914); *Chicago, C. C., & St. L. Ry. Co. v. Tehan*, 26 Ohio C. C., 457 (1904); *Wysocki v. Wisconsin Lake Ice & Coal Co.*, 121 Wis., 96, 98 N. W., 950 (1904).

¹ ASSUMPTION OF RISK.—*McDonald v. Standard Oil Co.*, 69 N. J. L., 445, 55 Atl., 289 (1902); *William Graver Tank Works v. McGee*, 58 Ill. App., 250 (1895); *Modlagl v. Kaysing Iron & Foundry Co.*, 248 Mo., 587, 154 S. W., 752 (1913); *St. Louis, I. M. & S. Ry. Co. v. Wells*, 93 Ark., 153, 124 S. W., 524 (1910); *Missouri & N. A. R. Co. v. Edwards*, 106 Ark., 574, 154 S. W., 209, 4 N. C. C. A., 330 (1913); *Wachsmuth v. Shaw Electric Crane Co.*, 118 Mich., 275, 76 N. W., 497 (1898); *Fordyce v. Stafford*, 57 Ark., 503, 22 S. W., 161 (1893); *Houston & T. C. Ry. Co. v. Conrad*, 62 Tex., 627 (1884); *Woodward Iron Co. v. Marbut*, 183 Ala., 310, 62 So., 804, 6 N. C. C. A., 1 (1913); *L'Houx v. Union Construction Co.*, 107 Me., 101, 77 Atl., 636, 30 L. R. A., 800 (1910); *Hefferen v. Northern Pacific R. Co.*, 45 Minn., 471, 48 N. W., 1, 526, 16 Am. Neg. Cas., 254 (1891); *U. S. Rolling Stock Co. v. Chadwick*, 35 Ill. App., 474 (1890); *Rawley v. Colliau*, 90 Mich., 31, 51 N. W., 350 (1892); *Barrett v. Chicago Bridge & Iron Co.*, 181 Ill. App., 204 (1913); *De Coux v. Kentwood & E. Ry. Co.*, 129 La., 161, 55 So., 749 (1911); *Alabama Great Southern Ry. Co. v. Hudson*, 64 Ala., 143, 51 So., 399 (1909); *Anderson v. Forrester-Nace Box Co.*, 103 Mo. App., 382, 77 S. W., 486 (1903); *International & G. N. Ry. Co. v. Hester*, 64 Tex., 401 (1885); *Illinois Central R. Co. v. Brown*, 107 Ill. App., 512 (1903); *Chicago & A. R. Co. v. Mahoney*, 4 Ill. App., 262 (1879); *El Paso & S. W. R. Co. v. Foth*, 101 Tex., 133, 105 S. W., 322 (1907); *Sager v. Samson Mining Co.*, 178 Mo. App., 502, 162 S. W., 762 (1914); *Ariz. Lumber & Timber Co. v. Mooney*, 4 Ariz., 366, 42 Pac., 952 (1895); *Bilicki v. Staten Island Shipbuilding Co.*, 147 App. D., 687, 132 N. Y. Supp., 564 (1911); *O'Hara v. Brown Hoisting Machine Co.*, 96 C. C. A., 250, 171 Fed., 394 (1909); *Renahan v. Mohr*, 171 Ill. App., 386 (1912); *East Tennessee, V. & G. R. Co. v. Stewart*, 81 Tenn., 432 (1884); *Georgia Railroad & Banking Co. v. Nelms*, 83 Ga., 70, 9 S. E., 1049, 20 Am. St. Rep., 308, 14 Am. Neg. Cas., 181 (1889); *Galveston & S. A. Ry. Co. v. Chojnacky* (Tex. Civ. App.), 180 S. W., 141 (1915); *Armour & Co. v. Harcrow*, 217 Fed., 224, 7 N. C. C. A., 325 (1914); *Rogers v. Hammond Packing Co.*, 167 Mo. App., 49, 150 S. W., 556 (1912); *Portman v. Cappon*, 145 Wis., 126, 128 N. W., 866 (1911); *Nordstrom v. Spokane & I. E. R. Co.*, 55 Wash., 521, 104 Pac., 809, 25 L. R. A., 364 (1909); *Dameron v. Commonwealth Steel Co.*, 186 Ill. App., 556 (1914); *Jones v. Southern Ry. in Ky.*, 175 Ky., 455, 194 S. W., 558 (1917); *Great Northern Ry. Co. v. Johnson*, 125 C. C. A., 183, 207 Fed., 521 (1913); *Chicago, R. I. & P. R. Co. v. Duran*, 38 Okla., 719, 134 Pac., 876 (1913); *Borckman v. Terry Construction Co.*, 157 App. D., 661, 142 N. Y.

AMOUNT OF DAMAGES AWARDED

The amount of damages awarded by courts of law for the loss or impairment of sight in one or both eyes is regulated by the general rules for the measure of damages for injuries to the person. Several factors are taken into consideration, the chief of which are: the extent of present and of future disability; past earning power of the injured party; future earning power, if any; present age, and general physical condition; and the number and closeness of relation of dependent persons. The foremost one is probably the lost earning capacity, though sometimes award is made without regard to this, but merely on principle. (There is sometimes evident a purpose of allowing a certain sum, the interest on which may be looked upon as an annuity.) Awards are mainly governed by the extent or degree of the injury to the sight, there sometimes being complications, with injury to other parts. There is generally apparent an inclination to grant the full amount which the law and the circumstances permit, this being all the more likely on the complete loss of vision, with its consequences. The value attached to the sense of vision and its loss has thus been indicated: "It is difficult to conceive of an injury more serious than this. [The injured person] is not only deprived of his earning power, but of that sense which all will agree upon contributes more to life's enjoyment than any other."¹ In another case it was declared with respect to a man who had been blinded in both eyes that he "goes sightless to his grave . . . and gets a very poor equivalent for the constant deprivation he endures."² The means and resources of the defendant naturally have a place in the determination of the sum to be allowed, a practice which, as we might expect, has the most frequent illustrations in suits

Supp., 645 (1913); *Boland v. Great Northern Ry. Co.*, 120 C. A., 624, 202 Fed., 485 (1913); *Tumminello v. Fore River Shipbuilding Co.*, 206 Mass., 311, 92 N. E., 449 (1910); *Mercer v. Atlantic Coast Line R. Co.*, 154 N. C., 399, 70 S. E., 742, Ann. Cas., 1912A, 1022, 2 N. C. C. A., 118 (1911); *Texas Central R. Co. v. Zumwalt*, 103 Tex., 603, 132 S. W., 113, 30 L. R. A. 1206 (1910); *Mosely v. Philadelphia & R. R. Co.*, 295 Pa., 342, 145 Atl., 293 (1929); *Turbeville v. Avery Lumber Co.*, 155 S. C., 202, 152 S. E., 439 (1930).

CONTRIBUTORY NEGLIGENCE.—*Gorrey v. W. F. Hurd Co.*, 177 Mich., 116, 143 N. W., 6 (1913); *Bisch v. Ralston Steel Car Co.*, 16 Ohio N. P., 33 (1914); *Pierce v. Atlanta Cotton Mills*, 79 Ga., 782, 4 S. E., 381 (1887); *Lehman v. Chicago, St. P. & M. Ry. Co.*, 140 Wis., 497, 122 N. W., 1059 (1909); *Hilman Land & Iron Co. v. Littlejohn*, 33 Ky. Law Rep., 983, 107 S. W., 736, 19 Am. Neg. Rep., 251 (1906); *De Francesco v. Piney Mining Co.*, 76 W. Va., 756, 86 S. E., 777, 10 N. C. C. A., 1015 (1915); *Smith v. Woolf*, 149 Ala., 457, 42 So., 824, 9 L. R. A., 338 (1906); *Griffin v. Baltimore & O. R. Co.*, 98 W. Va., 168, 126 S. E., 571 (1925).

FELLOW SERVICE.—*Whaalan v. Mad Riv. & L. E. R. Co.*, 8 Ohio, 249 (1858); *Card v. Eddy*, 129 Mo., 510, 28 S. W., 979, 36 L. R. A., 806 (1895); *Little Rock & Ft. Smith R. Co. v. Duffey*, 35 Ark., 602, 13 Am. Neg. Cas., 256 (1880); *Central Foundry Co. v. Bailey*, 162 Ala., 623, 50 So., 346 (1909); *Louisville & N. R. Co. v. Richardson*, 100 Ala., 232, 14 So., 209 (1893); *Loveless v. Louisville & N. R. Co.*, 199 Ala., 587, 75 So., 7 (1917).

¹ *Marsh v. Usk Hardware Co.*, 73 Wash., 543, 132 Pac., 241 (1913).

² *Stearns v. Reidy*, 33 Ill. App., 246, 135 Ill., 119, 25 N. E., 762 (1890).

against corporations. In some sections of the country, furthermore, higher awards have generally prevailed than in others, there being in the former a broader or more enlightened view of the matter. Finally, apart from the liberalizing influences, already noted, of the recently enacted employers' liability laws, there has been a common tendency, with the course of time, to increase the awards made.

The compensation actually afforded for injuries to the eye varies with individual cases. There are, however, four classes which may be distinguished, depending upon the extent of the damage inflicted: (1) injuries to one eye such as to cause partial or total blindness therein; (2) injuries to one eye, together with injuries to other parts of the body; (3) total or practically total loss of sight in both eyes, or such loss in one eye and serious impairment of that in the other; and (4) injuries to both eyes, together with injuries to other parts of the body. For injury to one eye alone, causing its destruction or the considerable impairment of its sight, awards range from \$300 to \$20,000, though both these extremes are exceptional. The usual limits may be said to be from \$750 or \$1000 to \$6000 or \$7500, with an average perhaps of \$2500 or \$3000. Where the ocular injury is accompanied with other injuries, the amount is increased proportionately to the extent of the additional suffering. For the loss or serious impairment of sight in both eyes or the loss of one and the serious impairment of the second, without injury to other parts, awards range from \$1200 to \$40,000 (with an occasional lower limit of \$500 for moderate impairment), the usual bounds being from \$3000 to \$20,000, with \$7500 or \$10,000 as an average. For further injuries the amount is duly enlarged.¹

In the damages thus found to be awarded, it appears that with interest at 5 per cent, the "annuity" returned for the loss of one eye, is, on the average, something like \$150, and for the loss of both \$400 or more. Measured in terms of the allowances provided for by the pension laws of some States, the indemnities secured through legal action for injury to the sight would offer more than an adequate substitute for such grants.²

¹ On amount of damages for injuries to the sight, see (besides foregoing cases) *Weeks v. Fletcher* (R. I.), 71 Atl., 881 (1909); *Freeman v. Wilson* (Tex. Civ. App.), 149 S. W., 413 (1912); *O'Hara v. Davis*, 109 Neb., 615, 192 N. W., 215 (1923); *St. Louis-San Francisco R. Co. v. Still*, 108 Okla., 42, 233 Pac., 1073 (1925); *Detroit Taxicab Co. v. Pratt*, 2 Fed. (2), 193 (1924); *Stolarecz v. International Iron & Steel Co.*, 207 Ill. App., 7 (1917); *St. Louis, I. M. & S. R. Co. v. True*, 71 Okla., 264, 176 Pac., 758 (1918). See also *Corpus Juris*, 1919, xvii., p. 1116, L. R. A., 1915F, 194, 46 A. L. R., 1281; Ann. Cas., 1913A, 1376; J. G. Sutherland, "Treatise on Law of Damages," 1916, §§ 451, 452, 1245, 1246; Theodore Sedgwick, "Treatise on Measure of Damages," 1912, § 1359; G. H. Parmelee, "Damage Verdicts," 1927, p. 320 (i).

² There has been only a partial realization of the fundamental difference between injuries

GENERAL RESULTS OF SUITS FOR DAMAGES

In the foregoing review are shown in what circumstances indemnities may be secured for injuries to the eye by actions at law, and what sums may be expected therefrom. What proportions the suits bear to the total number of such injuries received, we can do little more than conjecture. So far as industrial employees especially are concerned, it is probable that, all told, the awards of damages obtained in suits have represented only a very limited portion of the accidents causing the loss of sight in one or both eyes—and it has been upon them, because of their particular liability to such injury, and because of their general pecuniary condition as well, that the situation has borne most heavily.

A number of cases of accidents, it is to be remembered, do not reach courts of record; while a portion of claims are settled or compromised out of court, there at times being a stipulation to such effect entered into by the parties. Acceptance of benefit features from associations of employees with assistance from employers, as we are to find later, usually has the force of a bar to the prosecution of suits; while some employers insure themselves against suits by employees. In not a few instances action has not been attempted, no doubt by very reason of the small chance, under the established rules of law, of a favorable outcome. Such efforts have, furthermore, in very considerable degree been discouraged by the uncertainty, delay, and expense attendant upon the bringing of suits.¹

It is in great measure due to the foregoing considerations that there has now been effected, so far as concerns injuries to workers in general in the course of their work, a different form of indemnity, namely, by means of workingmen's compensation laws, soon to be examined. With thus the removal in large part of the occasion for suits by employees against employers for such injuries, these suits will become, and in fact are now becoming, of rapidly lessening necessity.

to one eye, whether effecting its complete destruction or not, and injuries to both eyes, the real detriment involved in the latter case being far greater than that involved in the former.

¹The amount of damages obtained from settlements in the case of injury to both eyes, as found for 57.0 per cent of the railroad employees of the United States from 1908 to 1910, averaged \$5131 for 5 cases; and the amount from settlements for injuries to one eye averaged \$551 for 334 cases, and the amount from judgments, \$2544 for 7 cases, the amount to a large extent depending on previous earnings. 62nd Cong., 2nd sess., Sen. Doc., Report of Employers' Liability and Workingmen's Compensation Commission, 1912, i., pp. 136-140. From one-third to one-sixth of the amount of awards has been said to go to attorneys, the proportion usually being highest in case of the full prosecution of suits in court, next highest in case of settlements out of court, and lowest in case of settlements without suits.

CHAPTER L

INDEMNITIES PAID FOR LOSS OF SIGHT: THROUGH INSURANCE POLICIES

PRINCIPLES OF INSURANCE AS APPLIED TO BENEFITS FOR INJURIES TO EYE

The next form of indemnity to be considered in connection with the loss of sight is that offered through insurance policies. According to the principle underlying all forms of insurance, contributions of a number of persons are made into a common fund, from which, on the occurrence of a particular loss or misfortune to one, there is afforded relief, the burden thus being generally distributed. The person entitled to benefit is, in other words, required to subscribe a sum, small in comparison with his possible gain, in the form of a premium, which assures his obtaining special assistance on a certain contingency. In the matter of injuries to the eye, there is concerned the branch of insurance known as accident insurance, and perhaps to an extent also health insurance, the benefit accruing when there befalls general disability or incapacitation, or a specified casualty, with respect to the eye.

Indemnity by means of insurance for injury to the sight represents a very great advance over that secured through legal process. In the one are avoided the expense, uncertainty, and delay incident to the other. Indemnity through insurance is without cost save as to previous contributions, and is prompt, definite, and assured. The beneficiary may know exactly what sum is to be expected, and under what conditions it is to be had. The method becomes, therefore, an even more satisfactory substitute for the giving of pensions. It turns out in fact to be the most desirable, if not the one altogether desirable, form of relief to persons deprived of the sense of sight. The insurance principle, indeed, contains possibilities hardly at present fully reckoned, and promises an extension as a social measure only the beginning of which we are probably now in a position to observe. As insurance is broadened and made more comprehensive in its bearings, indemnities will become more and more common, and will finally, we may trust, have practically exclusive possession of the field of material relief for the blind.

Unfortunately, as we have previously hinted, the chief, if not the

sole, impediment to the proposal is that its application lies mainly in the future. For this reason we must wait for a greater or less length of time till it can in reality be widely considered as a competitor to the pension plan. For the blind now found among us and for whom no provision was made at the time of the coming on of their affliction, it may not be availed of.

Yet, though the plan of indemnification by means of insurance policies may in some degree be regarded as but in embryonic shape, so far as it may hold benefit on a comprehensive scale for the blind, it is not to be understood that this plan is a novel one, or is one just on the eve of possible inauguration. It has, as a matter of fact, been in operation in the United States over a considerable period of time. In it indemnity for the loss of one or both eyes has been included, this beginning with the introduction of disability benefits. So far, however, as the population in general is concerned, the measure has had only limited application.

Thus far private accident insurance has been effected through several different channels. In all of them benefit in a certain definite sum of money is accorded to the insured on the occurrence of total disability, in which may be embraced blindness or the loss of both eyes, either impliedly or in express terms, and perhaps also on the occurrence of partial disability, in which may be embraced the loss of one eye or the impairment of vision to an extent not amounting to actual blindness. The pioneer form is through organizations formed expressly for the purpose, and conducted on a purely commercial basis. The second form is through the insurance features of fraternal or mutual benefit orders. Next is that through similar activities of labor unions. The last is that through associations of employees, to a greater or less extent under the auspices and with the assistance of employers. In addition may be mentioned the measures of indemnification of a public character, which may include to a certain extent insurance provisions. These several forms are, so far as they have a bearing upon the loss of sight, now in due order to receive consideration.

INSURANCE IN REGULAR ACCIDENT COMPANIES

In regular casualty and accident insurance companies, stock or mutual, a person, by the advancement at fixed intervals of a designated sum called the premium, takes out a policy, sometimes for a few months, but generally in force for one year and renewable at the expiration thereof, the amount of which the insurer obligates itself to pay over on satisfactory proof of the occurrence of a disabling accident. The matter is governed by the general rules of accident insurance, with

more or less of legal regulations, which have increased in the course of the years.¹ As a usual thing, the loss or serious impairment of sight in both eyes is included in total disability, and that in one eye in partial disability; but in many instances the policies provide a special indemnity for loss of sight in one or both eyes.² When "total and permanent" loss of sight is provided for, recovery is generally possible only on the loss of both. Loss of useful vision constitutes loss of eye.³ If some substantial vision remains, especially where loss is confined to one eye, or where ability to carry on work continues, recovery is less likely.⁴ In case sight in one eye is already gone, the loss of that in the second is sometimes taken as full blindness.⁵ According to the "standard" policy now prevailing, the disability must have arisen from "external, violent, and accidental" means. While damage from disease may thus be precluded, a rather wide definition may be given to "accident."⁶ Recovery may be possible even despite a previous weakened or diseased condition of the eyesight;⁷ though not if such prior condition may be proved to have been serious.⁸ Effects must in general be in evidence very soon after the injury in question.⁹

The amount of compensation allowed for blindness in both eyes, especially if directly mentioned, is usually in the standard companies

¹ See George Richards, "Treatise on Law of Insurance," 1909, p. 551; H. B. Fuller, "Law of Accident and Employers' Liability Insurance," 1913, pp. 34, 43, 356; F. H. Bacon, "Treatise on Law of Life and Accident Insurance," 1917, p. 2, §§ 508, 543; G. J. Couch, "Cyclopedia of Insurance Law," 1931, *passim*; J. A. Joyce, "Treatise on Law of Insurance," 1918, § 3034; Am. & Eng. Enc. of Law., ed. 1896, i., p. 302; *Corpus Juris*, 1914, i., p. 468; *Archives of Ophthalmology*, ix., 1933, p. 538. See also periodicals on subject.

² *Ætna Life Insurance Co. v. Griffin* (Tex. Civ. App.), 123 S. W., 432 (1909); *International Travelers Association v. Rogers* (Tex. Civ. App.), 163 S. W., 421 (1914).

³ *Murray v. Ætna Insurance Co.*, 243 Fed., 285 (1916); *Maness v. Life & Casualty Insurance Co.*, 161 Tenn., 41, 28 S. W. (2), 339 (1930).

⁴ *Phillipy v. Homesteaders*, 140 Iowa, 562, 118 N. W., 880 (1908); *Claxton v. American Casualty Co.*, 30 Cal. App., 457, 158 Pac., 544 (1916); *Vinginerra v. Commercial Casualty Co.*, 156 N. Y. Supp., 573 (1915); *Whilton v. American National Insurance Co.*, 17 Ga. App., 55, 87 S. E., 827 (1916).

⁵ *Humphreys v. National Benefit Association*, 130 Pa., 264, 20 Atl., 1047, 11 L. R. A., 564 (1891).

⁶ *Bennett v. Travelers Protective Association of America* (Neb.), 241 N. W., 781 (1932) (displacement of retina from strain from heavy lifting); *Tracy v. Standard Accident Insurance Co.*, 119 Me., 131, 109 Atl., 490, 9 A. L. R., 521 (1920) (striking of eye with great force by insect); *Maryland Casualty Co. v. Ohle*, 120 Md., 371, 87 Atl., 763 (1908) (loss of sight in both eyes through syphilitic blood poisoning occasioned in obstetrical operation, disability from septic matter having been especially provided for).

⁷ *Ward v. Standard Accident Insurance Co.*, 30 Fed. (2), 328, 63 A. L. R., 842 (1929) (subject to detachment of retina); *Travelers Insurance Co. v. McInerney* (Ky.), 119 S. W., 171 (1909).

⁸ *Standard Accident Insurance Co. v. Bailey*, 230 Ky., 626, 32 S. W. (2), 5 (1930) (already detached retina); *Prudential Insurance Co. v. Herndon*, 40 Ga. App., 692, 151 S. E., 399 (1930) (already venereal infection); *Penn. v. Standard Life Insurance Co.*, 158 N. C., 29, 73 S. E., 99, 160 N. C., 399, 76 S. E., 262 (1912) (already cataract); *Whipple v. Fid. & Cas. Co. of New York*, 134 Va., 195, 113 S. E., 878 (1922) (loss of sight alleged to result from extraction of tooth).

⁹ *Burrell v. Provident Life & Accident Insurance Co.*, 162 Tenn., 672, 39 S. W. (2), 1031 (1931) (loss of sight eleven days after injury not regarded as "immediate").

from \$5000 or \$7500 to \$15,000, and for blindness in one eye one-third or one-half as much. It may be paid in a lump sum; or a certain proportionate sum may be allowed for one or more years, or during the period of disability, which with blindness means for life.

The premium charged for accident insurance by private companies is in general from \$3 to \$20 per \$1000 of insurance. This premium depends almost entirely upon the kind of occupation in which the insured is engaged, or, in other words, upon the degree of exposure to injuries therein, the gradations covering a considerable scale.¹ The lowest rates are for persons in professional or mercantile vocations, the next for those in trades or in the superintendence of industries, and the highest for those employed in industry.²

In some of the larger companies, there are health policies which recognize blindness in both eyes caused by disease as a permanent disability, and provide payment therefor, which may be a sum somewhat smaller than that allowed in the case of accidents.

Insurance against blindness is not confined to the regular accident companies. A practice of recent development among old line life insurance companies, and at present becoming of increasing extent, is the allowing of benefits on ordinary policies for disabilities when total and permanent. In this arrangement it is provided as a rule that, on the occurrence of such disability, which the loss of sight is often stipulated to constitute, there be, without impairment of the amounts to be paid at death or on the maturity of the policy, and with the waiving of all further premiums, allowed a certain sum for a period of ten years, which is usually at a rate of not exceeding \$10 a month for each \$1000 of insurance carried.³

¹ In the simplest form, the rate per \$1000 of insurance is \$5 for "select" cases, \$6 for "preferred," \$7.50 for "ordinary," \$10 for "medium," \$12.50 for "special," \$15 for "hazardous," and \$20 for "extra-hazardous." In certain standard policies the rate per \$10,000 is \$25 for "select and preferred," \$35 for "extra preferred," and \$42.50 for "ordinary." In others the rate per \$7500 is \$62.50 for "select and preferred," \$72.50 for "extra preferred," and \$80.00 for "ordinary," with an allowance of \$2500 for loss of sight from disease. For temporary disability a weekly indemnity is granted. (Medical attention is also included to a large extent.) If the injury occurs in transportation or from a fire in a building double indemnity is generally allowed. "Traveler's insurance" is usually at the rate of 25 cents a day (or less for a longer time), with a weekly indemnity for total disability of from \$12.50 to \$25 for not more than one year, or perhaps a maximum of \$5000, and for partial disability half such amounts.

² Certain of the last named are not accepted at all. In some cases insurance may be purchased by workmen at amounts ranging from \$1 to \$2.25 a month, with monthly payments of from \$15 to \$25, or in exceptional instances of more, for partial disability; and of a sum equivalent to death benefits for total disability, or for the loss of both eyes, which may be from \$500 to \$1000—the different rates and benefits turning upon the nature of the occupation concerned.

³ By certain insurance companies special provision may be made for persons not over seventy years of age, by which \$5000 is allowed for loss of sight in both eyes, and \$2500 for loss of sight in one—with half such sums for persons over the age named. A few companies specialize as to the eye.

Considered as "annuities," the sums received from insurance companies for the loss of sight in both eyes do not, except among the classes held most desirable for insurance, reach the level attained by indemnities secured through legal action. It appears also that persons employed in industries in which injuries to the eye are especially likely to occur, are afforded, so far as commercial insurance is concerned, but little protection. The total number of persons receiving indemnities from accident or casualty, or from life insurance, companies each year by reason of loss of sight in both eyes, we do not know; but it is probably small. (A considerable number of claims, however, are paid for the loss of sight in one eye.)

INSURANCE THROUGH FRATERNAL AND SIMILAR ORDERS

The next form of insurance to be examined is that through mutual benefit associations, in which assistance in the form of benefits is allowed to members on the occurrence of certain eventualities, among which is generally disability, including blindness. These societies are largely fraternal orders, the issuing of such insurance being often one of their chief features, though certain of the most considerable and best known ones are without it. This form of benefit is found in particular among immigrant peoples, frequently in connection with a religious body. There are also a number of orders of local character, as well as organizations which are little more than social clubs, having similar relief features. Benefit payments in such societies come either from regular contributions or from assessments upon the members. Most are subject to certain legal regulation.

So far as regular provision is made in these organizations, insurance is usually offered at the rate of \$15 or \$18 per \$1000, except with respect to industrial employees, for whom rates are somewhat higher. (When dues are required, these may be from 25 cents to \$2.50, usually about 50 cents.) The amount nominally allowed for disability seldom exceeds \$6 or \$8 a week, sometimes much less; and may continue only for a limited period, though in a few cases a pension of from \$150 to \$300 is purported to be given during the continuance of disability. Sometimes the same benefits are granted for total disability as for death, or a lump sum the maximum of which is \$1000, with perhaps a proportionate part, as one-fourth, for partial disability in the loss of one eye.¹

¹ See *Mogé v. Société de Bienfaisance St. Jean Baptiste*, 167 Mass., 298, 45 N. E., 749, 35 L. R. A., 736 (1897) (benefits to apply whether cause was accident or sickness, and not confined to immediate state of sickness); *Sullivan v. Modern Brotherhood of America*, 167 Mich., 524, 133 N. W., 486, Ann. Cas., 1913A, 1116 (1911) (recovery as from accident due to gonorrheal infection from rubbing in eye of suds in washing of clothes).

The benefits afforded in this form of insurance do not, except perhaps with respect to wage-earners, appear to be quite so great as in that of the commercial companies, though it is to be remembered that the cost in the former is in general correspondingly less. We do not have information as to the number receiving assistance because of blindness. We may doubt whether any but a very small proportion receive substantial benefit.¹

INSURANCE THROUGH BENEFIT FEATURES IN LABOR UNIONS

Akin to the insurance schemes of mutual associations, but often on a really larger scale, are the benefit or insurance features of labor unions. In the smaller number of such unions, in general the largest and strongest, either a direct allowance is made to members on disability, or an insurance policy is provided through their machinery. For total disability, as constituting which blindness is in many instances specifically mentioned, the amount granted (sometimes the same as that for death) takes a broad range, with the extremes perhaps \$25 and \$4500, but with the usual limitations \$300 or \$400 and \$1000, the sum in a particular case depending for the most part upon the size and strength of the union, as well as upon the length of membership and the kind of insurance maintained in different ones. Sometimes periodical disability allowances are made for a time, these averaging under \$5 a week for complete disability (and one-third as much for partial). As a rule membership for a minimum length of time is required before the benefit features become applicable. Annual dues in the unions are usually from \$1 to \$16, while the cost of straight insurance is as a general thing from \$18 to \$35 per \$1000.²

There are also a certain number of locals in various unions which allow special benefits for disability, commonly from \$40 to \$100.

¹ Of the blind in Pennsylvania 0.7 per cent receive benefits from fraternal organizations or associations of employees. Report of Pennsylvania Institution, 1909, p. 22.

² The amount allowed by the Brotherhood of Locomotive Engineers for total blindness has been \$4500 (with \$1500 for partial); by the Order of Railway Conductors from \$1000 to \$3000; by the Brotherhood of Locomotive Firemen and Enginemen, from \$500 to \$3000; by the Railway Mail Association, \$3000 for the loss of both eyes (with \$1000 for one); by the Brotherhood of Railroad Trainmen, from \$500 to \$1350; by the Switchmen's Union, from \$300 to \$1200; by the International Brotherhood of Maintenance of Way Employees, from \$500 to \$1000; by the Brotherhood of Railway Carmen, from \$250 to \$1000; by the Amalgamated Society of Engineers, from \$300 to \$600; by the Amalgamated Association of Street and Electric Railway Employees, \$100; by the Cigar Makers International Union, from \$150 to \$500; by the Amalgamated Society of Carpenters and Joiners, from \$175 to \$700; by the United Brotherhood of Carpenters and Joiners, from \$100 to \$400; by the Amalgamated Glass Workers Union, from \$50 to \$100; by the Iron Molders Union, from \$100 to \$200; by the Brotherhood of Painters, Decorators, and Paper Hangers, from \$25 to \$200; by the International Spinners Union, \$150; by the Woodworkers International Union of America, from \$150 to \$250; by the Atlantic Coast Seamen's Union, \$200; and by the Lake Seamen's Union, from \$50 to \$300. See *Monthly Labor Review*, xxvi., 1928, 1, Jan., p. 1.

There are many unions, moreover, having sickness benefits, which in certain instances may perhaps be made to apply to accidents to the sight. In them relief may range from \$2 to \$15, but more often from \$3 to \$6, a week, and usually for not more than six or eight weeks; while dues are somewhat less than in unions offering special accident benefits. Finally, among employees in particular industries not organized into unions, there are a number of benefit societies, some of which provide small allowances for disability, the dues in such being considerably less than the dues in regular unions.

The relief allowed through union benefits shows, on the whole, much correspondence to that of the fraternal associations, while at its best it does not compare unfavorably with that of regular insurance companies.¹ The number of persons receiving aid because of blindness cannot be fixed upon, but it is not likely to be great.

INSURANCE THROUGH BENEFITS FROM ASSOCIATIONS OF EMPLOYEES WITH ASSISTANCE OF EMPLOYERS

By a number of industrial establishments, especially large corporations, employing considerable numbers of workers, there have been instituted among employees organizations with benefit features, under the name of employees' mutual associations, or under a similar appellation. The plan has originated with, and has been offered by, the establishments as a measure of assistance to injured employees, the aim being primarily the creation of relief departments.²

In some instances contributions for these funds come largely from the employees alone; in others they are furnished jointly by both parties; and in others still they are supplied practically entirely by the employers. In nearly all cases provision is made for disability from accidents arising in the course of work, which frequently includes accidents occurring in going to and from work; and there is due application to the loss of sight, which is sometimes directly mentioned.³

The indemnity allowed for total disability may be paid in a lump sum, or in allowances at stated intervals. If the former, the amount, in case the loss of vision is specified, lies between the extremes of \$60 and

¹ See *Maynard v. Locomotive Engineers Mutual Life & Accident Insurance Association*, 14 Utah, 458, 47 Pac., 1030, 16 Utah, 145, 51 Pac., 259, 69 Am. St. Rep., 602 (1897); *Switchmen's Union of North America v. Colehouse*, 227 Ill., 561, 81 N. E., 696 (1907).

² In some cases membership is compulsory. There may be certain conditions as to admittance, including age, term of service, physical capacity, etc. (Often all payments are forfeited on the leaving of the employment.) Operating expenses are generally borne by the corporations; but the actual administration is conducted in large part by the employees directly, the extent of their control often depending upon the extent of their advances to the relief funds.

³ In general the acceptance of benefit constitutes a waiver or release as to the prosecution of any legal claims.

\$4000, but with more common limits of \$250 and \$1000, as regards both eyes (and perhaps one-half or one-fourth as much as regards one eye). Occasionally the allowance is a certain proportionate part of previous annual wages, as one-half or one-third for the loss of both eyes (and a smaller part for the loss of one). Where payment is made periodically, the amount for the loss of both eyes may be a similar proportionate part of the previous wages, or may be between the limits of \$1 and \$15, usually \$6 or \$7, a week, continuing from one-third or one-half of a year to four or six years, or even more years, and sometimes a reduced sum indefinitely thereafter (with proportionate amounts for the loss of one eye). In a few cases benefits are paid for a specified number of weeks, but the total amount may not exceed a fixed sum or a certain proportionate part of former wages. In other cases a pension is granted, based upon a small percentage of the wages for each year of a certain number of years, this often being for each year of service 1.0 per cent of the average monthly wages for the ten years preceding. In some cases the rates for temporary disability apply to total disability for a certain period of time. Where the payment is to continue only a certain number of weeks, the basis is usually that of sickness benefits. In some corporations there are other systems, in a number benefits being allowed at discretion. In certain cases the same provisions are adopted as those contained in the workmen's compensation laws in the State in which operations are conducted.¹

The dues paid by employees have a considerable range, extending from 10 cents to 25 cents a week, but averaging about 50 cents a month, these being as a rule deducted from wages. In some corporations different rates are offered, allowing variations in size of the benefits received.

It may be added that with respect to some establishments, there is written liability insurance for the employees as a whole, or "blanket insurance," by general or by special casualty companies. For total disability, including loss of sight in both eyes, a sum equal to one or one and one-half times the previous annual wages, or a maximum sum of \$1500, is allowed (for the loss of one eye, often a sum equal to one-eighth of previous wages, or a maximum sum of \$200). Premiums are retained from the wages, to which may be added a certain amount by the employer. A number of corporations, furthermore, through the

¹ By the International Harvester Company for the loss of one eye three-fourths of annual wages have been allowed, and for the loss of both, wages for four years, but not less than \$2000. Allowances of the General Electric Company have been similar. By Swift & Company from \$400 to \$1600 has been granted for the loss of one eye, and from \$800 to \$3200 for the loss of both. By the American Shipbuilding Company one-half of annual wages has been allowed for the loss of both eyes, and one-sixteenth for the loss of one. By the United States Steel Company six months' wages have been allowed for the loss of one eye.

medium of group insurance, so called, without cost to employees, but in recognition of length of service, are now providing insurance against accidental injuries, including loss of sight. A form of this insurance applies to employees outside of their occupation, thus perhaps supplementing the workingmen's compensation laws, and securing protection for the entire time. On the other hand, some corporations, especially railroad corporations, act as agents for the regular insurance companies, for the collection of the premiums under individual accident policies on the employees. Finally, as we have had occasion to observe, very often employers are insured, either specially or in connection with more general insurance, against legal suits, both as regards litigation expenses and as regards damages. Upon the entire situation increasing effect is being had by the general enactment of workingmen's compensation laws.

As between the character of the benefits offered through the activities of employers and of those through labor unions, there does not seem to be very much difference, the costs being considered in each case, unless there may possibly be a slight balance on the side of the associations. The number of persons to whom relief is afforded by reason of loss of sight may, as in the previous cases, not be expected to be considerable.¹

¹ On the extent of aid from employers and from other sources in past years, see Report of New York State Bureau of Labor Statistics, 1899, p. 577; Report of New York State Employers Liability Commission, 1910, pp. 31, 217, 219; Report of United States Employers Liability and Workingmen's Compensation Commission, 1912, pp. 721, 735; Report of Illinois Workmen's Compensation Commission, 1910, p. 12. On payments for loss of eye, see Report of Ohio Employers Liability Commission, 1910; Crystal Eastman, "Work Accidents and Law," 1910, pp. 126, 304; publications of New York Branch of American Association for Labor Legislation, 1909, i., p. 6; *Charities and Commons*, xxi., 1909, p. 1162.

NOTE TO CHAPTER L.—On the subject of indemnities through insurance policies or employees' benefits, in relation to the loss of sight, see Report of United States Commissioner of Labor, 1908; Report of United States Industrial Commission, 1901, viii., pp. xlviii., cclix.; xvii., p. 867; United States Bulletin of Labor, Jan., 1897, p. 39; July, 1898, p. 552; Nov., 1898, p. 829; Nov., 1901, p. 1073; Bulletin of United States Bureau of Labor Statistics, no. 212, 1917, pp. 476, 491, 512; *Monthly Labor Review*, v., 1917, 2, Aug., p. 17; vi., 1918, 2, Feb., p. 192; Report of Wisconsin Bureau of Labor Statistics, 1904, p. 471; Report of New York State Bureau of Labor Statistics, 1899, p. 577; Report of New York State Employers' Liability Commission, 1910, p. 115; Proceedings of New York State Conference of Charities and Correction, 1909, p. 166; Proceedings of National Conference of Social Work, 1906, pp. 452, 481; 1917, p. 528; Report of Carnegie Foundation for Advancement of Teaching, 1915, p. 68; 1916, p. 109; C. R. Henderson, "Industrial Insurance in United States," 1909; G. L. Campbell, "Industrial Accidents and Their Compensation," 1911; F. W. Lewis, "State Insurance," 1909; W. F. Gephart, "Insurance and State," 1913; R. W. Blanchard, "Liability and Compensation Insurance," 1917; F. C. Schwedtmann and J. A. Emery, "Accident Prevention and Relief," 1911; J. B. Kennedy, "Beneficiary Features of American Labor Unions," 1908 (Johns Hopkins University Studies, xxvi.); D. H. Van Doren, "Workmen's Compensation Laws and Insurance," 1918; G. R. Miller, "Social Insurance in United States," 1918; *American Journal of Sociology*, vi., 1901, p. 646; *North American Review*, clxxi., 1905, p. 921; *American Labor Legislation Review*, vii., 1917, p. 79; *Annals of American Academy of Political and Social Science*, xvii., 3, 1901, p. 260; xxiv., 1905, p. 309; xxvi., 1906, p. 483; lxx., 1917, p. 231; clxi., 1932, p. 43.

CHAPTER LI

INDEMNITIES PAID FOR LOSS OF SIGHT: THROUGH PUBLIC MEASURES

PRINCIPLES INVOLVED IN GRANTING OF INDEMNITIES OF PUBLIC CHARACTER

The last form of indemnities possible to be paid on the loss of sight is that which is vested to a greater or less extent with a public character. Such indemnities may take the form of outright grants from public funds; or of payments from private sources, but with public assistance or at public direction. They may also be with or without contribution on the part of the person benefited, in the former case thus partaking somewhat of the nature of insurance. In the absence of the element of contribution, and especially in conjunction with the dispensing of funds directly from the state, there is an approach towards the giving of pensions. Considered merely in the light of the bestowal of public money, this is largely the practical issue of the matter. Yet there is involved a real and essential difference. In one case benefit is allowed as an indemnity on the occurrence of a particular disability, and in the other by reason of the presence of a certain condition. In one attention, prospective in its bearings, is directed to the befalling of a casualty, which is to be provided for, no less than guarded against; in the other attention, retrospective in its bearings, is directed to the existence of an invalidism, which calls for treatment. The basis of one is indemnification of the injured party for the disabling injury, and of the other the extension of a palliative to persons in a state of incapacitation.

The question of indemnities for disabling injuries belongs in very large degree to the general subject of social insurance; and in the extension and application of its principles will be provided indemnity for the loss or impairment of sight. In programs set before us there is embraced to a greater or less extent insurance for accidents, sickness, invalidity, and old age, among which there is full place for damage to the vision. In considerable measure the principle of insurance is carried out, in that contributions are made by all parties interested to a common fund, from which benefits are paid to the immediate sufferers. These contributions may be provided in greater or less part by the persons to receive assistance, and perhaps in respect to those engaged

in industrial pursuits, who are particularly in need of protection, also by the employer, with general supervision, and possibly with certain assistance, from the state. The securing of relief in the form of indemnities directly from the employer, but at the eventual cost of the industry, as required in the workingmen's compensation laws, is the first step in this direction, and will in time doubtless affect an increasingly greater portion of the population, so far as concerns the possibility of the loss of sight. There will then have to be considered the larger number of persons outside of industrial activity unable to provide for themselves, especially those who become blind after the ceasing of such activity, or in the advanced years of life, and also the smaller number who become blind in other circumstances. In all such measures due attention will have to be given to the matter of the prevention of blindness, wherein an even greater importance will lie. In respect to these several questions we shall have to wait upon the general developments of social insurance.

PRESENT SYSTEMS OF PUBLIC INDEMNITIES

There are three possible systems of indemnity with public aspects (including those in the nature of insurance)—those wholly and directly so; those effected at public instance, that is, required by the law at the expense of certain private employments; and those established with public assistance, that is, with contributions both from the state and from other interested parties. So far in the United States only the first two have made an appearance. Of these one, in the form of public allowances for disabilities, is now to be considered, and the other, in the form of legislation for compulsory indemnities on the part of employers to injured employees, or under workingmen's compensation laws, later.

In America disability benefits may be accorded by three public agencies: local, State, and Federal. Local systems at present are limited in the main to the allowances or benefits granted by the authorities in some cities, especially the larger ones, to certain employees on their disablement, including their loss of sight, while in service. Such have reference in particular to members of the fire, police, street-cleaning, and similar departments, the amount extended for total disability being usually one-half of the former pay, or from \$50 to \$150 a month. The provisions of the workingmen's compensation laws apply to employees of municipalities, such being regarded as regular employers, in the greater number of States of the American Union.

Action by the States in affording indemnities is even more restricted than that of municipalities, perhaps in large measure because of the

smaller number of employees of the former. In some instances there are now offered disability benefits to civil employees, including teachers, which are usually one-third or one-half of the previous pay, or from \$400 to \$1000 a year. In nearly all the States in which the provisions of the workingmen's compensation laws apply to municipal employees, they apply as well to State employees.

By the National Government the field of disability indemnities has been invaded to a very wide extent, its action being fairly rapid after the policy was once started. Beginning with measures of a local or of a restricted application, it has now in operation a general enactment for practically all civil employees. It regards itself as an employer, properly amenable to workingmen's compensation provisions.¹

¹ On measures with respect to persons blinded in military service. see *post*, p. 636.

CHAPTER LII

INDEMNITIES PAID FOR LOSS OF SIGHT: THROUGH WORK- INGMEN'S COMPENSATION LAWS

PRINCIPLES INVOLVED IN WORKINGMEN'S COMPENSATION LAWS

We have seen that in suits to recover damages for injuries, including those to the sight, incurred in the course of work there are involved no small uncertainty, delay, and expense; and that the proportion substantially compensated thus is inconsiderable. We have also seen that the assistance received through personal insurance measures, whether in regular insurance companies, in fraternal orders or labor unions with benefit features, or in plans offered by employers, does not affect, on the whole, a great number of employees. We know, furthermore, that few wage-earners are disposed, or are in a position, to save up enough to tide them over periods of disability. On the side of the employers, moreover, with the attitude of the statutes and of the courts becoming more and more favorable towards the interests of workingmen, reflected in the modification or abrogation of the former defenses, and in the making illegal or in the denial of the principle of "contracting out," there has been felt a want of definiteness as well as an increasing burden, which have made many of them not averse to a change. For these reasons there has been sought a different basis upon which indemnities for injuries to employees might be predicated.

It is found that the accidents complained of are not necessarily, or even usually, due to the fault of the workers, but are logically chargeable as a *risque industrielle*, that is, to be ascribed to the hazard inherent in the occupation itself. Consequently the loss should be borne directly by the industry concerned, with compensation to the injured party at its expense; and the cost should be distributed among those who gain from the operation of such industry. Thus looked at, the old idea underlying suits at law, namely, that damages were to be awarded as a recompense for injury, gives way to the conception that provision is but being made for the full carrying on of industrial processes. Instead of the risk being assumed by the party least able to sustain it, there are paid by the consuming public fixed indemnities for the occurrence of disabling accidents, the immediate remuneration being undertaken by the employer. Such is the principle of the workingmen's compensa-

tion laws, which now occupy such a large place in industrial relations, and in which social insurance at this time has its widest application.

GENERAL PROVISIONS OF LAWS

The general development of workingmen's compensation legislation in the United States cannot here be referred to, and the most important features of their present provisions, which are of a multiplicity of detail, can only be pointed out. Though the principle, aside from its application by the Federal Government, was introduced into one of the American States in 1902, the movement may be said really to have begun in 1910, since which date it has spread with the greatest rapidity. Laws are now found in nearly all the States of the Union.¹ The statutes are in an almost continuous process of amendment, the general tendency of which is to make them of wider scope and of more generous bearings.²

In the States of Arizona, California, District of Columbia, Idaho, Illinois, Maryland, New York, North Dakota, Ohio, Oklahoma, Utah, Washington, and Wyoming, and United States, the laws with respect to compensation are compulsory; in the remaining States they are elective. Under the compulsory plan all employers, and usually employees also, coming within the scope specified are required to accept the provisions. Under the elective plan, employers, and most often employees as well, may accept or reject as they see fit; but in the event of failure to accept, the common-law defenses are modified or entirely abrogated, except perhaps with regard to contributory negligence to a certain extent, or are called into requisition, as the case may be; or, in other words, penalization is afforded for rejection.³ Insurance of risks is required in the majority of the States.⁴

The statutes do not cover all occupations, certain ones being ex-

¹ States without the laws are Arkansas, Mississippi, and South Carolina. They are also found in most of the American possessions.

² Present citations are in the main based upon Bulletin of United States Bureau of Labor Statistics, no. 203, 1917; no. 240, 1918; no. 423, 1926; no. 496, 1929. See also *ibid.*, no. 126, 1913; no. 155, 1914; no. 185, 1915; *Monthly Labor Review*, vi., 1918, 4, April, p. 260, and *passim*; publications of American Association for Labor Legislation.

³ As a rule both employer and employee are presumed to elect. Even though the provisions are accepted, suit may in some instances be brought, especially if willful negligence on the part of the employer is proved, or if he fails to insure as required, or is in default in his premiums. Escape from the provisions by special agreement with the employee is rarely possible. In all compulsory States and in some elective States persons connected with occupations not covered may voluntarily come within the provisions, but suffer no penalty for not so doing.

⁴ Where so prescribed, it may be effected through (1) a monopolistic and exclusive State fund; (2) a competitive State fund, with other insurance as an alternative; (3) private insurance companies, stock or mutual; and (4) self-insurance. Where self-insurance is offered, proof of solvency, or of the ability to meet claims, is required. Where insurance is in a special company, both it and the employer are generally held liable.

empted either specifically or by implication, though with respect thereto, as we have noted, there may be acceptance if desired. Domestic service and agriculture are exempted in practically all States; and casual labor, in most. Non-hazardous occupations (with great variations as to what are so deemed) are excluded in many States, and employments having less than a specified number of workers (from two to sixteen, most often five) in even more. Persons having earnings of more than a fixed sum are exempted in some States. In a few States there are further exemptions as to certain particular occupations of a minor character.

Probably not less than three-fourths of the industrial workers of the United States are now covered by the provisions of the workingmen's compensation laws. In agricultural States there is less protection than in industrial States. The proportion of employees affected varies in the different States.¹

In most of the statutes reference is to the occurrence of an "accident," by which is meant a fortuitous event, happening from without, of a sudden and tangible nature, and causing an immediate result; that is, a traumatic incident, and one excluding the effects of disease. In the remainder the word "injury" is used, which is of somewhat broader significance. In a constantly increasing number of States there is express inclusion of occupational diseases.

In every State the occurrence must have been in the course of employment, and in nearly every one must have arisen out of it. Accidents resulting from willful intention or intoxication are generally rejected, and in some instances those from willful misconduct, or those in which there has been violation of the safety laws.²

In practically all the States payments are made by the employer alone.³ Nearly everywhere, in order to remove the possibility of malingering, a "waiting time" of from one to three weeks, most often of one, is required before the benefits begin, though for protracted disabilities they may relate back.⁴

A further benefit in the laws is in the medical relief afforded. Much is to be gained by timely and thorough treatment, which very often may reduce the damage inflicted, and sometimes effect a more or less

¹ On the number of employees included, see Bulletin of United States Bureau of Labor Statistics, no. 203, 1917, p. 66; no. 240, 1918, p. 28.

² In some States in such event there is a reduction of the amount to be awarded. On the other hand, this may be increased if the employer is found to have been negligent in the use of required safeguards.

³ They are usually in monthly or weekly installments. Benefits are generally subject to revision as the need may arise.

⁴ Nearly everywhere also a limit is placed upon the time within which notice of the accident is to be given, and upon the time within which a claim may be made. As a rule compensation is non-assignable, and is exempt from attachment or execution.

complete restoration. In most of the States it is required that "reasonable and necessary medical, surgical, and hospital service" be provided. This frequently is to last for a couple of weeks, though occasionally it may be for an unlimited period.¹

In certain States action has been taken for the restoration as far as possible to industrial activity, of persons who receive injury in the course of their employment—a matter to the significance of which attention has already been called in our consideration of industrial provision for the blind.²

In these laws the reporting of accidents is usually required to a greater or less extent. In a number the taking of special precautions for their prevention is enjoined upon employers. In such measures are found some of the most valuable provisions of all. In this way a great impetus is to be given to efforts for the avoidance of accidents, resulting in the installation of safeguards of various kinds, among which are to be not a few for the protection of the sight.

PROVISIONS OF LAWS APPLYING ESPECIALLY TO LOSS OF SIGHT

In the enactments it is generally provided that for total and permanent disability a certain sum shall be awarded to the injured person, and for partial disability a smaller sum. As blindness in both eyes amounts to the former, its occurrence at once entitles the sufferer to the full allowance; while blindness in one eye entitles him to a proportionate part. In nearly all the States, however, there is special and distinct enumeration of the loss of sight as permanent total disability.³ For the most part it is declared that the loss of sight in both eyes, such as is "total irrecoverable," "entire and irrecoverable," or the like, shall constitute total disability, for which compensation is to be duly made. In a few States there is a formal definition of blindness, this usually being the reduction of the eyesight to "one-tenth of normal vision in both eyes with glasses," or some similar expression.⁴

¹ The cost may be anywhere from \$25 to \$250, with an average perhaps of \$100, there being additional service allowed in some instances for special cases. Generally if the employer fails to furnish a physician, the employee may choose one. In some cases it is provided that if it appears probable that an operation will be of benefit, this must be accepted, or else no compensation will be allowed.

² In a majority of the States there are special administrative boards—there being today a tendency to consolidate all industrial functions in one body—for the purpose of carrying out the provisions of the laws, which classify industries, fix and collect premiums, receive reports, investigate claims, settle disputes, hear cases, make awards, issue decrees, pay compensation, and perform other duties. In the minority procedure is through the regular courts, though often with assistance from some State official.

³ In the exceptions (New Hampshire and North Dakota) loss of sight is covered under general terms.

⁴ The significance of "practical" or "industrial" blindness is not fully perceived in the statutes of all the States.

As to the effect of the loss of one eye when the other has already been lost, the statutes vary. In a small number of States a second injury is to be compensated on the basis of this second injury alone, without reference to the previous injury. In a larger number the compensation is the difference between the compensation for the total resulting disability and the compensation payable for the first injury, or is adjusted upon differences in earning capacity, or upon some similar basis. In certain States compensation is as for permanent total disability. In some cases the previous loss of eye is directly mentioned; and in some, the loss of the second eye.

The amount of compensation allowed for the loss of sight in both eyes (total permanent disability) is usually a certain proportionate part of the average wages received for a prescribed period, as daily, weekly, or monthly, prior to the time of the injury, with often a minimum of from three to seven dollars a week, and a maximum of from twelve to twenty-five dollars,¹ which is to continue for a stated period, with sometimes a further limitation as to the total amount to be given. The proportion, though in some cases greater, is most frequently one-half. It is such in Alabama, Colorado, Connecticut, Delaware, Georgia, Illinois, Michigan, Montana, New Hampshire, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Vermont, and West Virginia. The proportion is 55 per cent in Indiana, New Mexico, South Dakota, and Virginia; 60 per cent in Iowa, Kansas, Michigan, Nevada, North Carolina, Pennsylvania, Texas, and Utah; 65 per cent in Arizona, Kentucky, Louisiana, and Wisconsin; and two-thirds in Maine, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Oklahoma, and West Virginia, and under the Federal law.²

The length of time during which the compensation is to continue

¹ The limits are \$3 and \$20 in Louisiana; \$4 and \$15 in Georgia; \$5 and \$12 in Colorado; \$5 and \$15 in Delaware and Kentucky; \$5 and \$18.75 in Ohio; \$5 and \$21 in Connecticut; \$6 and \$12 in Idaho, Pennsylvania, and Virginia; \$6 and \$15 in Kansas, Nebraska, and Vermont; \$6 and \$18 in Maine; \$7 and \$14 in Michigan; \$7 and \$15 in Montana; \$7 and \$16 in Massachusetts, Rhode Island, and Utah; \$7 and \$18 in North Carolina; \$7 and \$20 in Texas; \$7.50 and \$15 in Illinois and South Dakota; \$8 and \$20 in Maryland; \$8 and \$25 in the Federal Government; and \$30 and \$60 (per month) in Nevada. There is a minimum limit of \$15 in New York. There are maximum limits of \$15 in New Mexico, and of \$25 in California. In Alabama and Tennessee the limit after 400 weeks is \$5. In certain cases the actual wages if below the maximum are to be paid.

² The proportion in Idaho is 55 per cent for the first 400 weeks, and then \$6 a week; in Missouri, two-thirds for the first 300 weeks, and then one-fourth; in Nebraska, two-thirds for the first 300 weeks, and then 45 per cent; and in California, 65 per cent for the first 240 weeks, and then two-fifths. In Oregon the amount allowed is \$30 a month in case the injured party is unmarried; \$35 in case there is a wife or disabled husband, but no child under sixteen years of age, and for each child under that age an increase of \$8. In Washington the terms are similar, with the respective sums \$35, \$40, and \$50. In Wyoming a lump sum of \$4000 is allowed, which may be increased according to family relations.

varies from a specified period to the duration of the disability if total. The latter is much the more generous provision, for with blindness it means through life. Such is found in Arizona, California, Colorado, Idaho, Illinois, Nebraska, Nevada, New York, North Carolina, Ohio, Oklahoma, Oregon, Utah, Washington, and West Virginia, and under the Federal law.¹ Compensation is continued 300 weeks in New Hampshire; 400 in Iowa, Louisiana, and New Jersey; 401 in Texas; 416 in Kansas; 500 in Oklahoma and Rhode Island; 520 in Connecticut and New Mexico; and 1000 in Wisconsin.²

Of the loss of one eye express mention is found in the apportionment of benefits in the laws of nearly all the States.³ In some of the States a distinction is made between ordinary loss of sight and loss through enucleation, the latter being regarded as a slightly more serious injury. In a small number special ratings are provided for the loss of an eye in conjunction with injury to some other part of the body, which are based upon a combination of the respective compensations offered. In several States proportionate compensation is to be accorded for the partial loss of an organ or member, or for the partial loss of its use, or even for serious impairment.

As with the loss of sight in both eyes, a proportionate part of the previous wages is awarded, with often an upper limit per week, and sometimes a lower limit as well, these being as a rule the same as, or slightly less than, the ones for the loss of both eyes. There is also in certain instances a fixation of the total sum to be received. The ratios as to amounts do not usually differ in the two cases. The time during which compensation is to last is, however, generally speaking, much shorter for the loss of one eye than for the loss of both. In a few States having no direct reference there is apparently no change, but in most the time in one case is only from one-half to one-fifth that in the other, while the limitation to the total award is usually somewhat smaller for the destruction of only one of the eyes.⁴ Loss of use of an eye is of-

¹ In South Dakota allowances are made till the total reaches \$3000; in Oklahoma, \$4000; in Virginia, \$5600; in Colorado, \$4375; in Maryland, Montana, and Pennsylvania, \$5000; in Michigan, \$7000; and in Minnesota, \$10,000 (under the Federal law, \$7500).

² It continues for 260 weeks in Vermont, but with a limitation of \$4000; 475 in Delaware, with a limitation of \$4000; 350 in Georgia, with a limitation of \$5000; 400 in North Carolina, with a limitation of \$6000; 500 in Maine, with a limitation of \$6000; 500 in Massachusetts, with a limitation of \$4000; 500 in Indiana and Rhode Island, with a limitation of \$5000; 550 in Alabama, Minnesota, New Mexico, and Tennessee, with a limitation of \$5000; and 8 years in Kentucky, with a limitation of \$6000. In West Virginia there are graduated proportions, with two-thirds for disability over 85 per cent.

³ Exceptions are California, New Hampshire, and North Dakota, being included in these under general partial disability. In Connecticut, Indiana, Maine, Massachusetts, and Rhode Island, there is reference to the reduction of vision to less than one-tenth of normal.

⁴ The term is 50 weeks in Massachusetts; 80 in Rhode Island; 100 in Alabama, Georgia, Idaho, Illinois, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota,

ten regarded as equivalent to its loss. In a few States the allowance for the eye is added to the regular awards for partial disability. In a few compensation depends upon the extent of the disability. In some cases compensation has reference to the difference between past and present earning capacity.

In a few States there has been introduced the principle of allowances proportioned to the extent of the disability, which may include the impairment of vision in one eye in relation to that in the other, or the creating of a disability as to both eyes by the injury of one and the impairment of sight in the other.¹

GENERAL AMOUNTS OF COMPENSATION GRANTED

The amount of compensation, in practice, for total blindness (permanent total disability) in given cases varies greatly among the different States. In the most liberal it may be as high as \$15,000, though in the larger number it is considerably less, in some not over one-half as much. For loss of one eye (permanent partial disability) the amount may range from \$300 to \$2500, though both these limits are exceptional. For the most part it is from about \$600 to about \$1000. It largely depends upon the seriousness of the accident in question in general. (For temporary disability it may be as low as \$50, or even lower.)

Compensation for injury to the eye is as a usual thing higher than Montana, New Jersey, New Mexico, South Dakota, Tennessee, Texas, Utah, Vermont, and Virginia; 104 in Colorado and Missouri; 108 in Arizona; 110 in Kansas; 113 in Delaware; 118 in Missouri; 125 in California, Nebraska, Ohio, Oklahoma, and Pennsylvania; 130 in North Dakota; 140 in Wisconsin; 150 in Indiana; 156 in Connecticut; 160 in New York (and under the Federal law); 300 in New Hampshire; 400 in North Carolina; 500 in Montana; 25 months in Nevada; and 40 months in Oregon.

¹ In Table XXXVI in Appendix A is shown the proportion of permanent disability of the eye as expressed in percentages of total disability, as has been employed in one State. For each per cent of disability there has been allowed three weeks' compensation. See Bulletin of United States Bureau of Labor Statistics, no. 203, 1917, p. 103; no. 240, 1918, p. 69. One classification of injuries to the eye according to the nature of the disability, with the relative values ascribed, is as follows: (1) complete loss of both eyes, 64; (2) complete loss of sight of both eyes, 64; (3) complete loss of one eye, 26; (4) complete loss of sight of one eye, 21; (5) complete loss of sight of one eye, plus such impairment of sight of other eye as to prevent reading or writing but with ability to find one's way, slight, 58, moderate, 60, severe, 62; (6) loss of sight of one eye, leaving no scar or blemish such as would afford an observer evidence of such loss, 16; (7) permanent impairment of vision of both eyes to the extent of rendering them useless for purposes of high visual requirement, but not for finding one's way, slight, 57, moderate, 59, severe, 61; (8) such permanent impairment of the vision of one eye as to render it useless for purposes of high visual requirement, but not affecting one's ability to find his way, the other being uninjured, 6; (9) hemorrhage of the eye, causing defective vision at times only, 6; (10) paralysis of the muscles of both eyes by reason of injury to the sockets, causing double vision, 41; (11) paralysis of the muscles of one eye by reason of injury to the socket of that eye, causing immobility and double vision, 21; (12) injury to the eye socket, causing immobility of the eyeball, with attendant impairment of range of vision only, 16; (13) laceration of lacrymal duct, causing chronic overflow of tears, 6. *Ibid.*, no. 157, 1915, p. 194; no. 212, 1917, pp. 175, 193, 249; *Monthly Labor Review*, vi., 1918, 3, March, p. 87.

for injury to other parts of the body. For full blindness it is little different from that for permanent total disability in general. For loss of one eye (permanent partial disability) it is usually more than double the amount for the average of other injuries of like extent or character taken together. (Compensation for temporary injuries to the eye amounts to much less than that for other temporary injuries, perhaps less than one-half.¹)

How far the rates provided in the laws for blindness or for loss of eyesight may be regarded as adequate, is a matter of experimental knowledge. Like the rates for different forms of disability, they are based on the capacity for service to be rendered and on the loss sustained, including the cost of medical treatment and other expenses. With greater experience and greater knowledge in the matter, they may be better adjusted to the true situation. They must be worked out in the course of time in conjunction with various factors, and according to various standards; and are to be considered as a part of the large question of industrial indemnities. The indemnities now afforded compare in their size at least favorably with those secured through suits at law or through schemes of personal insurance. They have, moreover, the inestimable advantage of being certain and available to all within the terms of the law, and of being bestowed without expense to the sufferer.

JUDICIAL DECISIONS IN CASES INVOLVING INJURIES TO EYE

To be considered now are the judicial decisions which have been rendered in cases involving injury to the eye under the workingmen's compensation laws. These decisions are concerned with not a few matters in the interpretation and application of the provisions, all to be determined in accordance with the general rules of the law, and with recognition of the usual rules of construction.

Perhaps most attention has been directed to the measuring or assessing of damages, or to the apportioning of awards.² In case the

¹ Compensation for total blindness (total disability) constitutes from 2 or 3 per cent to 6 or 8 per cent of all compensation for injuries to the eye, for loss of one eye (partial disability) from two-fifths to seven-eighths, and for temporary disability from 5 or 6 per cent to three-fourths. The corresponding proportions for injuries in general are a few per cent, from one-half to three-fourths, and over one-half. The proportions for both classes of accidents vary widely among different States.

² *Vishney v. Empire Steel & Iron Co.*, 87 N. J. L., 481, 95 Atl., 143 (1915) (for loss of 80 per cent of vision in both eyes, 80 per cent of previous wages to be allowed for 400 weeks, and not 80 per cent for 100 weeks for each eye); *Stoughton Wagon Co. v. Myre*, 163 Wis., 132, 157 N. W., 552 (1916); *McMyer Mfg. Co. v. Mehnke*, 126 C. C. A., 147, 209 Fed., 5, 4 N. C. C. A., 685 (1913); *Oliver v. Christopher*, 98 Kans., 660, 159 Pac., 397 (1916); *Mockett v. Ashlon*, 84 N. J. L., 452, 90 Atl., 127, 4 N. C. C. A., 862 (1913); *Mayberry v. Bon Air Chemical Co.*, 160 Tenn., 459, 26 S. W. (2), 148 (1932); *Loffland Bros. Co. v. Bonner*, 152 Okla., 50, 3 Pac. (2), 660 (1931); *Seneca Coal & Coke Co. v. Quisenberry*, 154

statute is silent upon the subject, it has readily been held that the loss of both eyes constitutes total disability, to be compensated accordingly. There has likewise been frequent willingness to regard what is practical blindness, or the impairment of vision to a degree just short of absolute blindness, as actually such.¹ By some courts, however, a stricter view is taken, and it is necessary that loss of eyesight be "entire and irrecoverable" before compensation is permitted. This is especially true when only one eye is affected, and loss of vision is not complete.² The question is often whether the loss is total, or whether the amount remaining may be regarded as partial. Where a considerable amount of vision remains, the courts are often inclined to regard the injury as not a total disability, but as partial, to be compensated accordingly.³ Should there be left considerable earning power, they are for the most part inclined to restrict compensation to partial disability only, and with reference to such earning power.⁴

In ascertaining the real loss suffered, little difficulty is met where the earning power of the injured party is seriously or substantially affected.⁵ In case, however, this should prove to be small, despite the infliction of the injury, there arise differences among the courts. Some hold that the injured person may insist upon his technical rights

Okla., 217, 7 Pac. (2), 169 (1932); *Capitol Drilling Co. v. Cole*, 143 Okla., 279, 288 Pac., 473 (1930) (loss of 100 per cent of vision in one eye and of 10 per cent in the second to be compensated as a loss in all of 55 per cent); *Nelson v. Kentucky River Stone & Sand Co.*, 182 Ky., 317, 206 S. W., 473 (1918); *O'Connell v. Sims Magneto Co.*, 85 N. J. L., 64, 89 Atl., 922 (1913); *Wazneak v. Buffalo Gas Co.*, 175 App. D., 268, 161 N. Y. Supp., 676 (1916).

¹ *E. H. Titchener & Co. v. Industrial Board*, 202 Ill. App., 296 (1916) (ability to distinguish light and moving objects only); *Town of New Holstein v. Daun*, 191 Wis., 93, 209 N. W., 695 (1926); *Employers Mutual Insurance Co. v. Industrial Commission*, 70 Col., 228, 199 Pac., 482 (1921) (loss of nine-tenths of vision); *Watkins v. U. S. Casualty Co.*, 141 Tenn., 583, 214 S. W., 78 (1919); *Burt v. Clay*, 207 Ky., 278, 269 S. W., 322 (1925); *Reilly v. Carroll*, 100 Conn., 282, 147 Atl., 818 (1929); *Liptak v. Industrial Accident Commission*, 200 Cal., 39, 251 Pac., 635 (1926); *Superior Coal Co. v. Industrial Commission*, 326 Ill., 584, 158 N. E., 209, 54 A. L. R., 634 (1927); *Androlinis v. Philadelphia & Reading Coal & Iron Co.*, 280 Pa., 71, 124 Atl., 336 (1924) (one-fifteenth of vision remaining); *American Zinc Co. v. Lusk*, 148 Tenn., 220, 255 S. W., 39 (1923); *Hudyck v. Wyoming Shovel Works*, 229 Pa., 182, 149 Atl., 312 (1930); *Klippert v. Industrial Insurance Dept.*, 114 Wash., 525, 196 Pac., 1 (1921).

² *Keyworth v. Atlantic Mills*, 42 R. I., 391, 108 Atl., 81, 8 A. L. R., 1322, 19 N. C. C. A., 707 (1919); *Hazelton Coal Co. v. Baker*, 112 Okla., 107, 240 Pac., 93 (1925).

³ *Morey v. Industrial Commission*, 58 Utah, 404, 199 Pac., 1023 (1920); *Underwriters Land Co. v. Willis*, 95 Okla., 182, 218 Pac., 692 (1923) (one-fourth of eyesight remaining); *Crane v. Elma Portland Cement Co.*, 234 Mich., 110, 208 N. W., 45 (1926) (one-eighth of eyesight remaining); *Phillip v. Wm. Cramp & Sons Ship & Engine Bldg. Co.*, 80 Pa. Sup., 68 (1923); *Chiovette v. Zenith Furnace Co.*, 148 Minn., 277, 181 N. W., 643 (1921).

⁴ *Ladd v. Foster Bros. Mfg. Co.*, 205 App. D., 794, 200 N. Y. Supp., 258 (1923); *State v. District Court*, 143 Minn., 397, 173 N. W., 857 (1919); *Chebot v. Industrial Accident Commission*, 106 Ore., 660, 212 Pac., 792 (1923); *Ex parte Shaw*, 210 Ala., 188, 97 So., 694 (1923); *Nestle's Food Co. v. Duckow*, 178 Wis., 646, 190 N. W., 434 (1922); *Snopkoski v. Home Riverside Coal Mines Co.*, 120 Kans., 747, 244 Pac., 849 (1926).

⁵ *Gorrell v. Battelle*, 93 Kans., 370, 144 Pac., 244 (1914).

under the law and receive compensation;¹ and others, that, provided he can continue work largely as before, he is not entitled to compensation, it being his duty to reduce the extent of his injury as much as possible.² At times a compromise may be effected, whereby one-half the difference between present and past earnings is allowed.³

Should an operation offer promise, and be attended with no further danger, it must be accepted; but should there be no assurance of beneficial results, or should there be involved the possibility of other damage, full compensation may be directed without the election of such remedy.⁴ In the event that the extent of an injury cannot be determined till some time in the future, the usual procedure is to make award according to apparent conditions, with the understanding that it will be subject to future developments; or the results may be waited for before the award is made.⁵

Opinion of the courts is divided upon the question whether sight of an eye is to be regarded as lost after an injury to it, when with the use of glasses its efficiency is but little reduced. By some courts the view is entertained that, however serious the injury may be or how remote natural recovery of the eyesight may be, yet where with glasses vision may become practically normal, with little interference with its effective employment, there is no call for compensation for the injury, or at least for full compensation; sometimes it is declared that there is no "loss" of the eye.⁶ By other courts emphasis is placed upon the circumstance that there has been an intrinsic impairment in an organ or member, notwithstanding resort to mechanical devices, all artificial appliances being looked upon as poor substitutes for what has been provided by nature.⁷

¹ *Hirschhorn v. Fiege Desk Co.*, 184 Mich., 239, 150 N. W., 851 (1915); *Margenovitch v. Newport Mining Co.*, 213 Mich., 272, 181 N. W., 994 (1920); *Stammers v. Banner Coal Co.*, 214 Mich., 215, 183 N. W., 21 (1921); *Winona Oil Co. v. Smithson*, 87 Okla., 226, 209 Pac., 398 (1922).

² *Boscarino v. Carfagno & Dragonette*, 220 N. Y., 323, 115 N. E., 710, Ann. Cas., 1918A, 530 (1917); *Abbott v. Concord Ice Co.*, 80 N. H., 301, 116 Atl., 751 (1922).

³ *Staley-Patrick Drilling Co. v. State Industrial Commission*, 88 Okla., 260, 212 Pac., 1006 (1923); *State v. District Court*, 143 Minn., 397, 173 N. W., 857 (1919).

⁴ *Joliet Motor Co. v. Industrial Board*, 280 Ill., 148, 117 N. E., 423, 15 N. C. C. A., 75 (1917); *Gulf States Steel Co. v. Cross*, 264 Ala., 155, 106 So., 870 (1924).

⁵ *Arcangelo v. Gallo & Laguidaro*, 177 App. D., 31, 163 N. Y. Supp., 727 (1917); *Feldman v. Braunstein*, 87 N. J. L., 20, 93 Atl., 679 (1915); *International Motor Co. v. Purcell*, 91 N. J. L., 707, 103 Atl., 860 (1917); *Summit Coal & Mining Co. v. Industrial Commission*, 308 Ill., 121, 139 N. E., 1 (1923).

⁶ *Gainey v. Warren-Nash Motor Corp.*, 231 App. D., 768, 245 N. Y. Supp., 371 (1930); *Powers v. Motor Wheel Corp.*, 252 Mich., 639, 234 N. W., 122, 73 L. R. A., 702 (1930); *Valentine v. Sherwood Metal Working Co.*, 178 N. Y. Supp., 494, 189 App. D., 410 (1919); *Bohecchio v. Charnin Contracting Co.*, 205 N. Y. Supp., 350, 209 App. D., 619 (1924); *Travelers Insurance Co. v. Richmond* (Tex. Civ. App.), 291 S. W., 1085 (1927); *Ex parte American Blakeslee Mfg. Co.*, 19 Ala. App., 547, 98 So., 817 (1924); *McNamara v. McHarg-Barton Co.*, 192 N. Y. Supp., 743, 200 App. D., 188 (1922).

⁷ "Where one must depend upon some mechanism, braces, or glasses to enable a member

A somewhat like technical question arises as to the effect of an injury to one eye which may be remedied to a greater or less extent by the use of glasses, but at the expense of lack of coördination with the good eye, or with the requiring of the disuse of the good eye. The decisions upon this point are not in accord, it sometimes being held that the sufferer is entitled to full compensation as for the loss of an eye, or that full compensable loss has been incurred;¹ and sometimes not.²

The courts may in similar manner be said to be divided as to the effect on the situation of, or the allowance to be made for, a previous injury or impairment, which may be regarded as having laid the foundation of the present disability, or as having predisposed for it. Under the strict view, no compensation may be awarded if the previous affection is even remotely involved, or if the last accident would not in itself have been sufficient to occasion the damage. Should the prior condition have already been serious, very strong evidence will be required to show that the injury in question was the actual cause, this being especially the case if it appears that the complainant had been suffering from an eye malady or from a systemic disorder liable to have a pronounced influence.³ Under the more liberal attitude, compensa-

of the body to function properly, and such necessity is the result of an accident, such member is permanently impaired." *Johannsen v. Union Iron Works*, 97 N. J. L., 569, 117 Atl., 639 (1922). "Because such a loss may be regained by artificial means, while perhaps in a measure compensatory, it is not a complete or satisfactory substitute for nature's art." *Globe Cotton Oil Mills v. Industrial Commission*, 64 Cal. App., 307, 221 Pac., 658 (1923). See also *Butch v. Shaver*, 150 Mich., 94, 184 N. W., 572 (1921); *Suggs v. Ternstedt Mfg. Co.*, 232 Mich., 599, 206 N. W., 490 (1925); *McDonald v. State Treasurer (Ida.)*, 16 Pac. (2), 988 (1932); *U. S. Smelting, Refining & Mining Co. v. Evans*, 35 Fed. (2), 459 (1929); *In re O'Brien*, 228 Mass., 211, 117 N. E., 619 (1916); *State v. District Court*, 133 Minn., 439, 158 N. W., 700 (1916); *Graf v. National Steel Products Co.*, 225 Mo. App., 702, 38 S. W. (2), 518 (1931); *Allessandro Petrillo Co. v. Marioni*, 33 Del., 199, 131 Atl., 164 (1925).

¹ *Juergens Bros. Co. v. Industrial Commission*, 290 Ill., 420, 125 N. E., 337 (1919); *Smith v. F. & B. Construction Co.*, 185 App. D., 51, 172 N. Y. Supp., 581 (1918); *Marland Refining Co. v. Colbaugh*, 110 Okla., 238, 238 Pac., 831 (1925).

² *Frings v. Pierce Arrow Motor Corp.*, 169 N. Y. Supp., 309, 182 App. D., 445 (1918); *Arnold v. S. R. Mfg. Co.*, 203 N. Y. Supp., 546, 208 App. D., 305 (1924); *Masset v. Armford Coal Mining Co.*, 82 Pa. Sup., 579 (1924); *Stefan v. Red Star Mill & Elevator Co.*, 106 Kans., 369, 197 Pac., 861 (1920) (destruction of angle of vision); *Gigleo v. Dorfman & Kimiausky*, 106 Conn., 401, 138 Atl., 448 (1927).

³ *Shaughnessy v. Diamond Iron Works*, 166 Minn., 506, 208 N. W., 188 (1926); *Ft. Worth & D. C. R. Co. v. Griffith* (Tex. Civ. App.), 27 S. W. (2), 351 (1930); *Chicago Bridge & I. Co. v. Industrial Commission*, 316 Ill., 622, 147 N. E., 375 (1925); *Sincerity Coal Co. v. Industrial Commission*, 320 Ill., 251, 150 N. E., 633 (1926); *Whelan v. Eastern Coal Dock Co.*, 80 Pa. Sup., 155 (1922); *Landau v. E. W. Bliss Co.*, 199 App. D., 145, 191 N. Y. Supp., 454 (1921); *Pinto v. Chelsea Fibre Mills*, 186 N. Y. Supp., 748 (1921); *Perry Co. Coal Corp. v. Industrial Commission*, 294 Ill., 117, 128 N. E., 333 (1920); *Keller v. Industrial Commission*, 302 Ill., 610, 135 N. E., 98 (1922); *Rector v. Roxana Petroleum Corp.*, 108 Okla., 122, 235 Pac., 183 (1925); *Hayes v. Motor Wheel Corp.*, 233 Mich., 538, 208 N. W., 44 (1926); *Taylor v. Tenn. Coal, Iron & R. Co.*, 219 Ala., 614, 123 So., 78 (1929); *Spring Valley Coal Co. v. Industrial Commission*, 280 Ill., 315, 124 N. E., 545 (1919); *Desruchers v. Atwood-Crawford Co.*, 47 R. I., 116, 131 Atl., 48 (1925).

tion will be permitted whenever it appears clear that the accident in question is the proximate, or even the precipitating, cause, or that it has aggravated or rendered incurable a previous trouble.¹

A matter of similar order, but in general of far less serious consequence, has to do with injury which destroys the remainder of vision in an already imperfect or practically worthless eye. Here the rule seems to be that such an eventuality constitutes the loss of an eye, which is fully compensable.² In some cases the removal of a sightless eye is likewise so;³ in others, not⁴ (the question of disfigurement being possibly a special consideration). Occasionally award has reference to permanent partial disability rather than to loss of eye.⁵

A similar issue arises in respect to the impairment of vision subsequently to the accident in question, other forces or causes having been set in operation to affect it. If it appears that the consequences have a direct connection with it, are definite, and are not too remote, an award will be directed;⁶ otherwise, not.⁷ Akin to this is the con-

¹ *Estate of Beckwith v. Spooner*, 183 Mich., 323, 149 N. W., 971 (1914); *Great Northern Ry. Co. v. King*, 165 Wis., 159, 161 N. W., 371 (1917); *Purchase v. Grand Rapids Refrigerator Co.*, 194 Mich., 103, 160 N. W., 391 (1916); *Duprey's Case*, 219 Mass., 189, 106 N. E., 686 (1914); *Industrial Commission v. Johnson*, 64 Col., 461, 172 Pac., 422, 16 N. C. C. A., 350 (1918); *Nelson v. Industrial Insurance Dept.*, 104 Wash., 208, 176 Pac., 15, 17 N. C. C. A., 1057 (1918); *Lampi v. Kaponen*, 178 Minn., 133, 226 N. W., 475 (1929); *McGuirk v. Sun Shipbuilding Co.*, 80 Pa. Sup., 456 (1923); *J. H. Hardin Co. v. Crowe*, 81 Ind. App., 513, 143 N. E., 710 (1924); *Davis v. Davis*, 80 Pa. Sup., 343 (1923); *Edgewater Coal Co. v. Ramey*, 235 Ky., 703, 32 S. W. (2), 56 (1930); *Wood v. Vroman*, 215 Mich., 449, 184 N. E., 520 (1921); *Harney Coal Corp. v. Pappas*, 230 Ky., 108, 18 S. W. (2), 958, 73 A. L. R., 473 (1929); *Varner v. Loraine Steel Co.*, 96 Pa. Sup., 336 (1929); *Eureka Coal Co. v. Melcho*, 85 Ind. App., 552, 154 N. E., 774 (1927); *Rockford City Traction Co. v. Industrial Commission*, 295 Ill., 358, 129 N. E., 135 (1920); *Hamilton v. Dept. of Labor & Industries*, 129 Wash., 186, 224 Pac., 387 (1924); *Pawling & H. Co. v. Mildenberger*, 170 Wis., 146, 174 N. W., 455 (1919); *Edson v. Industrial Accident Commission*, 206 Cal., 134, 273 Pac., 572 (1928); *Haas v. Globe Indemnity Co.*, 16 La. App., 180, 132 So., 246 (1931); *Bakunas v. Philadelphia & R. Coal & Iron Co.*, 78 Pa. Sup., 175 (1922); *Alladin Coal & Mining Co. v. Industrial Commission*, 308 Ill., 35, 129 N. E., 30 (1923); *Hiester v. Hunter*, 89 Pa. Sup., 393 (1926); *Maryland Casualty Co. v. Industrial Accident Commission*, 91 Cal. App., 574, 267 Pac., 321 (1928); *Pfeiffer v. N. D. Workmens Compensation Bureau*, 57 N. D., 326, 221 N. W., 894 (1928); *City of Shelbyville v. Hendrick*, 161 Tenn., 119, 29 S. W. (2), 251 (1930); *Hazel Atlas Glass Co. v. Pendergrass*, 152 Okla., 271, 4 Pac. (2), 96 (1931).

² *Borello's Case*, 125 Me., 395, 134 Atl., 374 (1926); *Indiana Central Coal Co. v. Meek* (Ind. App.), 177 N. E., 332 (1931); *Liimatta v. Calumet & Hecla Mining Co.*, 229 Mich., 41, 201 N. W., 204 (1924).

³ *Mosgaard v. Minneapolis St. Ry. Co.*, 161 Minn., 318, 201 N. W., 545 (1924); *Hessley v. Minneapolis Steel Const. Co.*, 156 Minn., 405, 195 N. W., 274 (1923); *Wareheim v. Melrose Granite Co.*, 161 Minn., 275, 201 N. W., 543 (1924); *Indiana Limestone Co. v. Stockton*, 88 Ind. App., 22, 163 N. E., 27 (1928).

⁴ *Quinn v. American International Shipbuilding Corp.*, 77 Pa. Sup., 304 (1921); *Rye v. Chevrolet Motor Co.*, 229 Mich., 39, 201 N. W., 226 (1924); *London Guaranty & Accident Co. v. Industrial Commission*, 76 Col., 155, 230 Pac., 598 (1924); *Indiana Central Coal Co. v. Meek*, Ind. App., 177 N. E., 332 (1931).

⁵ *Hobertis v. Columbia Shirt Co.*, 173 N. Y. Supp., 606, 186 App. D., 397 (1919).

⁶ *Hunnewell's Case*, 220 Mass., 351, 107 N. E., 934 (1915) (award both for original injury and for neurosis later induced); *In re Sponatski*, 220 Mass., 526, 108 N. E., 466,

⁷ *McCoy v. Michigan Screw Works*, 180 Mich., 454, 147 N. W., 572, 5 N. C. C. A., 455, L. R. A., 1916A, 323 (1914) (later gonorrheal infection after rubbing of eye); *Voelz v.*

sideration of the element of time involved when the results of an injury fully manifest themselves at a later period. Here a generally liberal view is taken; and time is held to relate back to the original occurrence, or to the putting in motion of harmful forces, the whole award accruing at the culmination of the disability.¹

A question of special concern is whether a person who happens already to be blind in one eye is, on the loss of the second, entitled to compensation as for total blindness. On this there is sharp disagreement. One view is that an employee taken into service is accepted just as he is and for whatever work he is capable of, and that he may therefore lay claim to the full benefits of the law if rendered totally disabled.²

8 N. C. C. A., 1025 (1915) (later development of insanity); *Riley v. Mason Motor Co.*, 199 Mich., 233, 165 N. W., 745 (1917); *Cline v. Studebaker Corp.*, 189 Mich., 514, 155 N. W., 519, L. R. A., 1916C, 1139, 6 N. C. C. A., 899 (1915) (gonorrheal infection from attempt to remove particle from eye by means of match); *League v. Weidely Motor Co.*, 78 Ind. App., 695, 135 N. E., 265 (1922) (later development of cataract); *Pino v. Ozark Smelting & Mining Co.*, 35 N. M., 87, 290 Pac., 409 (1930) (later development of cataract); *Heaps v. Industrial Commission*, 303 Ill., 403, 135 N. E., 742 (1922); *Indiana Power & Water Co. v. Miller*, 73 Ind. App., 537, 127 N. E., 837 (1920); *Oklahoma Woodchuck Zinc Lead Co. v. State Industrial Commission*, 87 Okla., 263, 210 Pac., 923 (1922); *Shell Pipe Line Co. v. Camper*, 143 Okla., 84, 287 Pac., 1009 (1930) (development of ulcer).

Industrial Commission, 161 Wis., 240, 152 N. W., 830, L. R. A., 1916A, 326 (1915) (later gonorrheal infection after rubbing of eye); *Borgsted v. Shults Bread Co.*, 180 App. D., 229, 167 N. Y. Supp., 647 (1917) (atrophy of optic nerve alleged to have been induced from fracture of ankle, with consequent lowered resisting power); *State v. District Court*, 137 Minn., 435, 163 N. W., 755, L. R. A., 1917F, 1094 (1917) (gonorrheal infection after removing particle from eye with handkerchief and match); *McLain v. New Orleans Public Service*, 12 La. App., 668, 126 So., 701 (1930) (cataract not developing from glare involved in electric welding).

¹ *Johansen v. Union Stockyards Co.*, 99 Neb., 328, 156 N. W., 511 (1916).

² "The employee when he entered the service of the subscriber [the employer], had that degree of capacity which enabled him to do the work for which he was hired. That was his capacity. It was an impaired capacity as compared with the normal capacity of a healthy man in the possession of all his faculties. But nevertheless it was the employee's capacity. It enabled him to earn the wages which he received. He became an 'employee' under the Act, and was thereby entitled to all the benefits conferred upon those coming within that description. The Act affords a fixed compensation for a limited time 'while incapacity for the work resulting from the injury is total.' It establishes no other standard. It fixes no method for dividing the effect of the injury and attributing a part of it to the employment and another to some preëxisting condition, and it gives no indication that the legislature intended any such division. The total capacity of this employee was not so great as it would have been if he had had two sound eyes. His total capacity was thus only a part of that in the normal man. But that capacity, which was all he had, has been transformed into a total incapacity by reason of this injury. That result has come to him entirely through the injury." *In re Branconnier*, 223 Mass., 273, 111 N. E., 792 (1916). "The humane and beneficent purpose [of the law] should not be frustrated by technical, cold-hearted construction against the injured workman. It is the spirit of the Act that that loss resulting from the injury should be borne by the industry in which it occurred, not by the injured employee, his dependents, or the public." *Calumet Foundry & Machine Co. v. Mroz*, 79 Ind. App., 305, 137 N. E., 627 (1922). "The petitioner [employee] had eyesight when he entered on his employment. That eyesight was a physical function; it was destroyed utterly." *Combination Rubber Mfg. Co. v. Court of Common Pleas*, 96 N. J. L., 544, 115 Atl., 138 (1921). See also *Fairfield v. Huntington*, 23 Ariz., 528, 205 Pac., 814 (1922); *Fair v. Hartford Rubber Works*, 95 Conn., 350, 111 Atl., 193 (1920); *Brooks v. Peerless Oil Co.*, 146 La., 383, 83 So., 663 (1920); *Hebron's Case*, 247 Mass., 427, 142 N. E., 60 (1924); *McNeil v. Panhandle Lumber Co.*, 34 Ida., 773, 203 Pac., 1068 (1921) (no distinc-

The contrary view is that when the employer forms the engagement, he, being aware of the situation, acts with due regard to his own liability, and hence may be held only for the last injury; or, in other words, that the final disability may be considered as due to two separate accidents, with only the second of which he may be chargeable—such being especially the case where the law declares that an injury creating, in combination with a previous one, total disability, is to be regarded as but partial.¹ There may even be said to be a third doctrine, which is in the nature of a compromise, though believed to involve substantial justice. According to it an equitable arrangement may be worked out by allowing compensation as for total disability with a certain reduction, especially less the amount of compensation for the first eye, earning power being an important factor.²

Of somewhat like tenor with the effects of a subsequent injury to an employee already blind in one eye are the effects to an employee in such condition or suffering defective eyesight when he meets a new accident not involving the eye—an accident which he would have avoided if he had been in possession of full powers of vision. In such case there is little reluctance in allowing him regular compensation.³

Finally, there are to be considered various terms of the statutes in their application to particular cases. A matter to which judicial attention has to be given at times is whether a particular injury to the

tion in eyes of law between healthy and unhealthy worker); *Dombrozzi v. E. Gross & Co.*, 112 Conn., 627, 153 Atl., 780 (1931); *Wabash Ry. Co. v. Industrial Commission*, 186 Ill., 194, 121 N. E., 569 (1919); *Hargis v. McWilliams Co.*, 9 La. App., 108, 119 So., 88 (1928); *Superior Coal Co. v. Industrial Commission*, 321 Ill., 533, 152 N. E., 535 (1926); *Nease v. Hughes Stone Co.*, 194 Okla., 170, 244 Pac., 778 (1925); *Industrial Commission v. State Insurance Compensation Fund*, 71 Col., 106, 203 Pac., 215 (1922); *Kreighbaum v. Buffalo Wire Works Co.*, 169 N. Y. Supp., 307, 182 App. D., 448 (1918); *Moore v. Western Coal & Mining Co.*, 124 Kans., 214, 257 Pac., 724 (1927); *In re J. & P. Coats*, 41 R. I., 289, 103 Atl., 833 (1918).

¹ "It is inaccurate to say that the injury resulted in total blindness. The industrial injury plus the injury received in childhood resulted in total blindness." *Stevens v. Marion Machine Foundry & Supply Co.*, 77 Ind. App., 28, 133 N. E., 23 (1921). See also *Lumbermen's Reciprocal Association v. Gilmore* (Tex.), 258 S. W., 268 (1924), 292 S. W., 204 (1927); *Lente v. Lucci*, 275 Pa., 217, 119 Atl., 132 (1922); *Halopy v. Peters Creek Gas Coal Co.*, 79 Pa. Supp., 196 (1922); *Collins v. Albert A. Albrecht Co.*, 212 Mich., 147, 180 N. W., 480 (1920); *Panther Coal Mines v. Industrial Commission*, 342 Ill., 68, 173 N. E., 818 (1930); *Peterson v. Wisener*, 218 Ala., 137, 117 So., 663 (1928); *Daugherty v. Scandia Coal Co.*, 206 Iowa, 120, 219 N. W., 65 (1928); *Callett v. Chattanooga Handle Co.*, 165 Tenn., 343, 55 S. W., 257 (1933).

² *Jennings v. Mason City Sewer Pipe Co.*, 187 Iowa, 967, 174 N. W., 785 (1919); *Blaes v. E. W. Bliss Co.*, 177 App. D., 370, 163 N. Y. Supp., 722 (1917); *State v. District Court*, 143 Minn., 397, 173 N. W., 857, 18 N. C. C. A., 1084 (1919); *Weaver v. Maxwell Motor Co.*, 186 Mich., 585, 152 N. W., 993, Ann. Cas., 1917E, 238, L. R. A., 1916B, 1276 (1915); *Combs v. Hazard Blue Grass Coal Corp.*, 207 Ky., 242, 268 S. W., 1070 (1925); *Lehman v. Schmal*, 179 Minn., 388, 229 N. W., 553 (1930). See also *International Harvester Co. v. Industrial Commission*, 157 Wis., 167, 147 N. W., 53, Ann. Cas., 1916B, 330, 24 A. L. R., 1462, 73 A. L. R., 711 (1914).

³ *Peru Basket Co. v. Kuntz*, 69 Ind. App., 510, 122 N. E., 349 (1919); *Chicago Journal Co. v. Industrial Commission*, 305 Ill., 46, 136 N. E., 46 (1922).

eye is due to "accident" or to disease. Some courts have been quicker than others to accept industrial diseases as accidents, especially when they have been by gradual or slow approach or long-continued action, often express statutory enactment upon the subject being required.¹ Injuries from wood alcohol have been declared to be within the meaning of the law.²

The next matter to be passed on is whether the injuries in question have been brought about from acts or in occupations within the purview of the law. An important development in connection with the conduct of an employee who seeks compensation lies in his failure to follow instructions designed for the prevention of accidents. With respect to the eye this has relation especially to the wearing of goggles. Disobedience to the injunction of the employers may constitute a bar to compensation. This may be true even though goggles are temporarily removed because of discomfort or for other reason. Failure may readily be regarded as "willful."³ In certain circumstances, however, the employee may be absolved from the requirement, as when not duly informed of the rule, when goggles are not available or feasible at the time, when they would not really have helped, when wearing them might have added to the danger, or when unimpeded vision is necessary for the work in hand.⁴

As to what may have occurred in the due course of employment or as having duly arisen out of it, a broad policy is for the most part adopted. Even though an injury has resulted more or less indirectly from the prosecution of a given task, yet if it has been in the general lines of the employer's business, and there is a clearly established connection between the two, it will be regarded as sufficiently embraced.⁵ If, however, such is not the case, and the act is not really

¹ *Industrial Commission v. Russell*, 111 Ohio, 692, 146 N. E., 305 (1924) (blindness in two years after exposure to ultra violet ray in operation of moving picture machine regarded as not traumatic injury); *Zajkowski v. American Steel & Wire Co.*, 258 Fed., 9 (1918) (intense glare from sheets of metal); *Weber v. George Haiss Mfg. Co.*, 191 App. D., 12, 181 N. Y. Supp., 140 (1920) (removal of eye due to "hysterical blindness"); *Dondeneau v. State Industrial Accident Commission*, 119 Ore., 357, 249 Pac., 820 (1926) (glaucoma from heat from fire); *Sullivan's Case*, 241 Mass., 36, 134 N. E., 393 (1922) (disturbance of retina in consequence of heavy lifting); *Taylor v. Ewarts*, 261 Mich., 558, 246 N. W., 496 (1933) (infection from chemical dust).

² *Fidelity & Casualty Co. of New York v. Industrial Accident Commission*, 177 Cal., 614, 171 Pac., 429, L. R. A., 1918F, 856, 17 N. C. C. A., 784 (1918).

³ *McAdoo v. Industrial Accident Commission*, 40 Cal. App., 570, 181 Pac., 400 (1919); *Lobdell Car Wheel Co. v. Sobieski*, 32 Del., 462, 125 Atl., 462 (1924); *Nashville, C. & St. L. R. Co. v. Coleman*, 151 Tenn., 443, 269 S. W., 919 (1925).

⁴ *Great Western Electro-Chemical Co. v. Industrial Accident Commission*, 35 Cal. App., 450, 170 Pac., 165 (1917); *Cochran v. Conulette Shipbuilding Co.*, 157 La., 184, 102 So., 198 (1924); *Nashville, C. & St. L. R. Co. v. Wright*, 147 Tenn., 619, 250 S. W., 903 (1923); *St. Louis S. W. Ry. Co. of Texas v. Kidd* (Tex.), 269 S. W., 471 (1925).

⁵ *State v. District Court*, 129 Minn., 176, 151 N. W., 912 (1915); *In re Hurle*, 217 Mass., 223, 104 N. E., 336, 4 N. C. C. A., 537, L. R. A., 1916A, 279, Ann. Cas., 1915C, 919 (1915);

incidental to the discharge of duty, as, for instance, in fun or sport, or in a personal quarrel, no redress may be expected from the employer.¹ Whether the occupation involved is one which may be considered to be provided for in the statute depends upon the construction given by the courts.² The remaining decisions have chiefly to do with the consideration of the time or the manner of making complaint.³

Kobyra v. Adams, 176 App. D., 43, 162 N. Y. Supp., 269 (1916); *State v. District Court*, 134 Minn., 16, 158 N. W., 713 (1916); *In re Heitz*, 171 App. D. 961, 155 N. Y. Supp., 1112, 218 N. Y., 148, 112 N. E., 750, L. R. A., 1917A, 344 (1916); *Sedlock v. Carr Coal & Mfg. Co.*, 98 Kans. 680, 159 Pac., 9, L. R. A., 1917B, 372 (1916); *Markell v. Daniel Green Felt Shoe Co.*, 175 App. D., 958, 161 N. Y. Supp., 1134, 221 N. Y., 493, 116 N. E., 1060 (1917); *State v. District Court*, 140 Minn., 75, 167 N. W., 283 (1918); *Leonbruno v. Champlain Silk Mills*, 192 App. D., 858, 183 N. Y. Supp., 222 (1920); *Widman v. Murray Compensation Co. of America*, 245 Mich., 332, 226 N. W., 711 (1929).

¹ *De Filippis v. Falkenberg*, 170 App. D., 153, 155 N. Y. Supp., 761 (1915); *Fishing v. Pillsbury*, 172 Cal., 690, 158 Pac., 215 (1916); *Pierce v. Boyer-Van Kuran Co.*, 99 Neb., 321, 156 N. W., 509 (1915); *Clark v. Clark*, 189 Mich., 652, 155 N. W., 507 (1915); *In re Borin*, 227 Mass., 452, 116 N. E., 817 (1917).

² *State v. District Court*, 128 Minn., 43, 150 N. W., 211 (1914); *Miller & Lux v. Industrial Commission*, 32 Cal. App., 250, 162 Pac., 651 (1916); *Uphoff v. Industrial Commission*, 271 Ill., 312, 111 N. E., 128, 13 N. C. C. A., 980 (1915); *Winfield v. New York Central & H. R. R. Co.*, 168 App. D., 351, 153 N. Y. Supp., 499, 216 N. Y., 284, 110 N. E., 614, 10 N. C. C. A., 916 (1915); *Beckman v. J. W. Oelrich & Son*, 174 App. D., 353, 160 N. Y. Supp., 791 (1917); *Ideal Steam Laundry v. Williams*, 153 Va., 176, 149 S. E., 479 (1929); *Malandrino v. Southern N. Y. Power & Ry. Corp.*, 190 App. D., 780, 180 N. Y. Supp., 735 (1920); *New Castle Foundry Co. v. Lysker*, 68 Ind. App., 569, 120 N. E., 713 (1918); *Leuchuk v. Krug Cement Products Co.*, 246 Mich., 589, 225 N. W., 559 (1929); *Hasslen v. Carlson*, 180 Minn., 231, 231 N. W., 188 (1930); *Jackson v. Weidman Lumber Co.*, 246 Mich., 189, 224 N. W., 355 (1929); *Mashburn v. City of Grandfield*, 142 Okla., 247, 286 Pac., 789 (1930); *Maryland Casualty Co. v. Stevenson*, 143 Okla., 285, 288 Pac., 954 (1930); *Crockett v. Industrial Accident Commission*, 190 Cal., 583, 213 Pac., 969 (1923).

³ *Duffy v. Town of Brookline*, 226 Mass., 131, 115 N. E., 248 (1917); *Smith v. Solvay Process Co.*, 100 Kans., 40, 163 Pac., 645 (1917); *Bloom's Case*, 222 Mass., 434, 111 N. E., 45 (1916); *Marinaccio v. Flinn-O'Rourke Co.*, 172 App. D., 378, 158 N. Y. Supp., 715 (1916); *Troth v. Millville Bottle Works*, 86 N. J. L., 558, 91 Atl., 1031 (1914); *In re McCarthy*, 226 Mass., 444, 115 N. E., 764, 14 N. C. C. A., 346 (1917); *Kalucki v. American Car & Foundry Co.*, 200 Mich., 604, 166 N. W., 1011 (1918); *Storrs v. Industrial Commission*, 285 Ill., 595, 121 N. E., 267 (1918); *Vandalia Coal Co. v. Holtz*, 68 Ind. App., 670, 120 N. E., 386 (1918); *Ostegaard v. Adams & Kelly Co.*, 113 Neb., 393, 203 N. W., 564 (1925); *Guderian v. Sterling Sugar & Ry. Co.*, 151 La., 59, 91 So., 546 (1922); *Central Locomotive & Car Works v. Industrial Commission*, 290 Ill., 436, 125 N. E., 369 (1919); *Conley v. Upson Co.*, 197 App. D., 815, 189 N. Y. Supp., 473 (1921); *Murphy v. W. D. Cook Construction Co.*, 130 Kans., 604, 285 Pac., 604 (1930); *Federal Rubber Co. v. Industrial Commission*, 185 Wis., 299, 201 N. W., 261, 24 N. C. C. A., 665 (1924); *Peabody Coal Co. v. Industrial Commission*, 349 Ill., 160, 181 N. E., 622 (1931); *Kibbey v. L. O. Gordon*, 260 Mich., 531, 245 N. W., 512 (1932).

NOTE TO CHAPTER LII. On the subject of workmen's compensation laws in connection with the loss of sight, see H. H. Kessler, "Accidental Injuries," 1931, p. 437; H. Magnus and H. V. Würdeman, "Visual Economics," 1902; G. M. Kober and W. C. Hanson, "Diseases of Occupation and Vocational Hygiene," 1916, p. 328; I. M. Rubinow, "Social Insurance," 1913, p. 194; A. B. Honnold, "Treatise on American and English Workmen's Compensation Laws," 1917, pp. 478, 619, 625; N. H. Dosker, "Manual of Compensation Laws," 1917, pp. 121, 149, 172, 1078; J. B. Boyd, "Law of Compensation for Injuries," 1913, §§ 456, 520, 531; 73 A. L. R., 1931, p. 706; Transactions of American Academy of Ophthalmology and Oto-Laryngology, 1914, p. 109; Transactions of Ophthalmological Society of United Kingdom, 1924, p. 270; Transactions of American Ophthalmological Society, 1920, p. 298; 1921, pp. 363, 381; Proceedings of Section on Ophthalmology of American Medical Association, 1922, p. 337; Proceedings of National Society for Prevention of Blindness, 1927, p. 46; National Research Conference Board, Research Report

no. 61, 1923, p. 205; Bulletin of United States Bureau of Labor Statistics, no. 216, 1917, p. 20; no. 234, 1918, pp. 58, 276; no. 281, 1921, p. 46; no. 304, 1922, p. 232; no. 333, 1923, pp. 170, 180; no. 385, 1925, pp. 68, 74; no. 406, 1926, p. 79; no. 395, 1925, p. 9; no. 432, 1927, pp. 11, 14, 46, 200, 205; Industrial Bulletin of New York State, May, 1931; *Monthly Labor Review*, x., 1920, 4, April, p. 187; xxv., 1927, 6, Dec., p. 86; *Journal of Political Economy*, xxiv., 1916, p. 951; xxv., 1917, p. 961; *Economic World*, xxix., 1925, p. 311; *Journal of American Bar Association*, xi., 1925, p. 15; *Nation's Health*, viii., 1926, p. 312; *Illinois Medical Journal*, lix., 1931, p. 315; *Annals of Ophthalmology*, x., 1901, p. 219; *Industrial Doctor*, ii., 1924, p. 174; *Medical Record*, xc., 1916, p. 765; ci., 1922, pp. 145, 446; *New York State Journal of Medicine*, xviii., 1918, p. 284; xx., 1920, p. 198; xxiii., 1923, p. 343; *Wisconsin Medical Journal*, xvii., 1918, p. 54; xxv., 1926, p. 67; *Pennsylvania Medical Journal*, xx., 1917, p. 695; xxi., 1918, p. 278; *Ophthalmology*, xi., 1915, pp. 526, 774; *New York Medical Journal*, ciii., 1916, p. 881; *Medical Review of Reviews*, xxviii., 1922, p. 561; *American Journal of Ophthalmology*, ii., 1919, p. 813; vii., 1924, p. 876; xv., 1932, p. 228; *Eye, Ear, Nose, and Throat Monthly*, iv., 1925, p. 15; *Ohio State Medical Journal*, xvi., 1920, p. 909; *Atlantic Medical Journal*, xxix., 1925, p. 16; *Archives of Ophthalmology*, liii., 1924, pp. 37, 172; *Southern Medical Journal*, xviii., 1925, p. 429; *Journal of New Jersey Medical Society*, xxi., 1924, p. 206; xxix., 1932, p. 761; *Journal of American Medical Association*, lxxiv., 1920, p. 166; lxxix., 1922, p. 1843; *Texas Medical Journal*, xxviii., 1932, p. 231; W. R. Dunton, "Reconstructive Therapy," 1919, ch. 14.

PART VI
ORGANIZATIONS INTERESTED IN BLIND

CHAPTER LIII

PRIVATE ASSOCIATIONS FOR BLIND

PURPOSES AND SCOPE OF WORK OF ASSOCIATIONS

In considering the work for the blind in connection with schools, libraries, home teaching, and other agencies, we have noticed that in time a number of them have come to extend their activities to a field beyond that for which they were originally planned. In the course of the performance of their several tasks it has been discovered that the wants of the blind were greater than could be attended to along one narrow line of effort, and that work begun for them must consequently be enlarged so as to affect them in other relations. In fact, there have been few organizations which have found themselves able to confine their activities to one form, but most have been constrained, owing to the peculiar and pressing needs of the blind, to undertake to minister to them on a broadening basis. From a consideration so developed have sprung up organizations better adapted to carry on such work. It has also happened that an interest has been awakened in the blind as a class from the placing of books or of tickets for an entertainment at the disposal of some, or from the providing of employment in individual cases, an interest which has led to the formation of a special body to engage in work of different kinds in their behalf. Again, it has occurred in some communities that, without any preliminary agency or stimulus to create a concern in the blind, but in response to the recognition of their general needs, societies have been organized to answer this call, with the mapping out beforehand, to a greater or less degree, of a certain field of endeavor.¹

In these several ways have come about associations for the welfare of the blind. They have been organized to minister to the blind generally and to afford assistance of various kinds. They sometimes start out with modest programs, which are expanded as their resources permit, and which may develop into far-reaching and comprehensive schemes of service.

To relate the several specific activities open to associations is to

¹ It has often been library work which has called attention to the condition and needs of the blind, and has resulted in the creation of associations for them. There is only a short step, as has often been demonstrated, from the furnishing of a reading room, to the supplying of a teacher in the home or to the engaging in of some other task, and the bringing into being of a regular society.

set forth nearly all that is possible in the way of special social service for the blind, including many of the forms of work which have been referred to in preceding chapters. An association may make a census of the blind in a given community, with a report of ages, causes of blindness, economic condition, educational attainments, fitness for industrial employment, and similar details; may keep a register of all the blind thus found; may prepare programs of work based upon individual and collective needs as disclosed by its examination; may serve as a bureau of information; may as a further result of its acquaintance with the situation offer advice and suggestions of one kind and another; may secure library facilities; may see that reading matter is introduced into the homes; may inaugurate a system of home teaching; may establish a ticket bureau for concerts, lectures, and the like; may provide entertainments and outings; may assist in the formation of clubs of blind persons for their mutual benefit, culture, and enjoyment; may establish social centers, with special means for service; may endeavor to get blind children into the schools; may assist in securing compulsory education laws; may promote day schools in large cities if needed; may employ nurses for blind babies, and for the aged and infirm blind; may extend material relief in kind or in money as it may be required; may provide homes for the aged and infirm, especially for women; may provide guides where such may be called for; may secure admission to some home; may provide radios or other equipment to be used in the home; may transcribe braille; may establish training schools to give the blind industrial instruction; may secure licenses or otherwise assist the blind in the conduct of a small business; may lend capital to set up blind persons in business or trade; may secure employment in general shops or in business establishments; may open workshops for a portion of the blind; may assist in the marketing of products made in shops or in individual homes; may promote measures for the prevention of blindness, including a campaign of education, the enactment of laws, and the establishment of clinics for the treatment of eye troubles; may coöperate with various educational, social, civic, philanthropic, and religious agencies for the benefit of the blind; may endeavor to acquaint the public with the real condition and needs of the blind; may assist in the creation of a public commission in order that recognition by the state may be given to the needs of the blind, and its power invoked in their behalf; may help secure desirable legislation; and may perform other services as they may be found necessary or desirable.

It is not to be thought that all or most of the foregoing objects may in fact be accomplished in any but a small number of associations;

but none the less they represent the activities which in one place or another it may be possible to carry on. The purposes of the New York Association for the Blind are thus expressed:

To prevent unnecessary blindness; to help the blind to help themselves; to succor and relieve the ill, needy, and aged blind; to give the blind work, recreation, and vacations.

The object of the Massachusetts Association for Promoting the Interests of the Adult Blind is:

To initiate and promote practical movements in the interest of the blind; to render practical assistance to any blind person who cannot be helped by the Massachusetts Commission or the Perkins Institution.

The aims of the Cleveland Society are as follows:

The prevention of unnecessary blindness and the relief and treatment of all cases reported to the Society; the providing of literature for those adult blind who have not learned to read and who for any reason are unqualified for attendance at the State school for the blind; coöperation with the board of education in placing blind children in public schools; the maintenance of workshops where blind men and women are employed in weaving art fabrics and rugs, in caning chairs, and in making brooms and baskets; to serve as a bureau of information in matters relating to the blind, and of industrial aid to those blind people who are seeking employment along special lines.

The objects of the Pennsylvania Association are:

To act as a bureau of information and industrial aid; to establish and equip, and maintain one or more schools for industrial or agricultural training, and workshops for the employment of the blind; to devise a means for the sale and distribution of the products of such schools and plants and homeworkers; to provide industrial instruction for blind women in their own homes; to aid the poor and infirm blind who are not capable of learning a trade; to aid in the prevention of blindness; and to arouse the public to a clearer appreciation of the capabilities of the blind.

In some instances there is stressed the desire to improve the condition of the blind—economic, social, physical, educational; to provide sociability or entertainment or recreation; to promote friendly visiting or contacts with the blind in general, or to bridge the supposed gulf between the blind and the seeing; to alleviate the loneliness of the blind; to assist in their rehabilitation; and so on.¹

Indeed, so broad is the field and so many the opportunities in respect to the work of associations for the blind that it may well be doubted if there are in the world other organizations, considering the

¹ There are several limited associations chiefly for the purpose of transcribing braille or of providing radio sets.

numbers involved, which in genuine service are qualified to do more for the happiness or uplift of a part of the human race.¹

PRESENT EXTENT OF ASSOCIATIONS

There are, strictly speaking, two kinds of associations for the blind. One is composed of persons in various walks of life who, having become interested in the blind and their welfare, have united in an association for their benefit, employing an executive staff to carry on the direct work. The other is composed for the most part of actual workers for the blind who are engaged in different activities in their behalf. It is the first of these that is usually meant by the term "association;" and it is to it that we may devote our initial attention. Such organizations, however, have various names: associations for the blind, associations to improve the condition of the blind, associations for the promotion of the interests of the blind, associations for the aid of the sightless, associations for the welfare of the blind, and the like. Equivalent titles are societies, clubs, committees, guilds, welfare leagues, etc.²

With regard to the territory covered, the associations are of two classes: local or city associations, and State associations. The former confine their work in the main to a particular city, perhaps conducting their operations in a more intensive manner. The latter, affecting a larger area, are likely to come into touch with a greater number of blind persons, including those in remote sections. With the increasing interest in the blind, it is probable that both kinds will become more numerous, unless their work is anticipated to some extent by State commissions. In some States there are associations in different sections or for a group of counties. Now and then local associations are promoted by commissions.³

The associations are, practically all of them, products of the twentieth century.⁴ The initial organization for the interests of the blind may be regarded as the Pennsylvania Home Teaching Society and Free

¹ In the consideration of all work for the blind, the services, though not of an "organized" character, of members of their immediate families, and to an extent of their close friends also, are to have full recognition. It is the ministrations and attentions of these, day after day, and through life, practical, sympathetic, and faithful, which constitute help and comfort to a degree to be but little realized.

² For a directory of activities for the blind, see American Encyclopedia and Dictionary of Ophthalmology, 1916, ix., p. 6419; C. F. F. Campbell and M. D. Campbell, "Institutions for Blind in America," L. S. Rand, "Directory of Activities for Blind in United States," 1926, 1932; *Outlook for Blind*, *passim*.

³ In West Virginia power of incorporation is expressly conferred upon associations for the blind as well as upon other benevolent bodies. West Virginia Code, 1923, p. 1248.

⁴ Not a few of the associations have come into being as the result of the efforts of women's clubs; while with others there has been aid from charitable organizations or social settlements. The Massachusetts Association owes its origin to the Women's Educational and Industrial Union of Boston.

Circulating Library for the Blind, which was created in Philadelphia in 1882, though its purposes, as its name implies, were limited. The first association, so called, with a general field, was that in Massachusetts, which was formed in 1903. The first city association was that in New York, created in 1905. Local associations are now found in many of the larger cities of the country, as well as in some smaller ones. State associations have been founded in most of the States, the number steadily increasing.¹ Some of the State associations have local branches. Several organizations, both local and State, have ceased to exist.² It may be added that other private organizations for the blind, as industrial establishments, libraries, the publishers of literature, etc., engage in certain forms of service, especially in the extending of advice, and in efforts to secure employment, to market products and to provide entertainment. (Some eye infirmaries engage in similar work on a small scale.)³

DIRECTION AND MEANS OF SUPPORT OF ASSOCIATIONS

The associations are in general open to all persons interested in the payment of the prescribed dues for membership. A governing or directing board is elected, to which are entrusted the duties of management. This board may be composed of five or seven members, or of several times this number. (It often contains one or more blind persons.)

The means for support of the associations comes in the main from two sources: the dues and fees of members;⁴ and general voluntary contributions, including those from regular friends, from special organized campaigns, from allocations from community chests or like bodies, and from entertainments given to raise funds. Annual receipts range from one thousand dollars or thereabouts in the case of the smaller bodies, to perhaps fifty thousand in the case of the largest. Several of the associations also have endowment funds.⁵ Aside from financial donations, there are frequently extended favors of not a few kinds.⁶ In most cities the largest aid is from community chests.

¹ Some associations center around the State school. In one or two Southern States there are special associations for the colored. In Pennsylvania there are a number of local county branches.

² In New York City and in Massachusetts associations for mothers or other relatives of blind children have been formed.

³ At Morristown, New Jersey (formerly at Nashville, Tennessee), is the "Seeing Eye," a training center for the use of dogs as guides for the blind.

⁴ Annual dues are most often one or two dollars, though in some cases they may go much higher. There are corresponding dues for contributing, sustaining, or life members.

⁵ The New York Association has an endowment fund of more than two million dollars, and property worth almost as much. To the association in Rochester, New York, there has been a bequest of nearly one quarter million dollars, and in Grant Rapids, Michigan, of half as much.

⁶ These may be gifts in kind, the granting of newspaper space, or other assistance.

RESULTS OF ACTIVITIES OF ASSOCIATIONS

The activities of certain associations have already to a large extent been indicated in what has been said of their work in connection with efforts for the prevention of blindness, in home teaching, in securing industrial employment, and in other forms of service for the blind. Some associations carry on a greater number of activities, or reach a greater number of the blind, than do others. Some have considerable resources, are highly organized, and engage in various undertakings; others have meagre equipment, and affect the blind in smaller degree. By different ones not a little has been done to call the attention of the public to the needs of the blind, and to secure important measures for their benefit, including now and then the creation of commissions. With other special agencies for the blind, and with general agencies affecting them, there has as a rule been endeavor to coöperate. In a number of instances associations have won for themselves an acknowledged place among philanthropic organizations.¹ There is usually membership in community chests in those cities having such.²

GENERAL BODIES WITH SPECIAL DEPARTMENTS OR ACTIVITIES
FOR BLIND

In certain general bodies, religious, civic, or philanthropic, there has been an interest taken in the blind of a more or less comprehensive nature. In a few cases special departments have been created concerned directly in work for them; in others particular attention of some kind has been given.

Many individual churches have blind persons as members, and seek to serve them in one way or another, though without attempting special operations for them as a class.³ In the Protestant Episcopal Church there was organized in Philadelphia in 1903 the Society for

¹ Certain of the associations are in possession of special buildings, or centers, for their work, several also having summer homes. By the Massachusetts Association there is maintained a social and industrial center for women, and a social center for men. To the center conducted by the New York Association has been given the name of "lighthouse." There are also "lighthouses" in a few other cities. The forms of service rendered, and the number of persons affected, by the New York Association (through industrial shop, lighthouse, craft shop, music school, and eye clinic) are as follows (1931): shop, 128; lighthouse crafts, 46; home teaching, 451; placement, 59; newsstands, 31; music school, 225; kindergarten, 8; special subjects, 52; referred to agencies for the blind, 176; referred to general agencies, 163; placed in institutions or homes, 47; financial relief or loan, 563; legal advice, 19; fresh air work, 247; camp activities (for younger), 141 (besides supplying of radios, gymnasium, swimming, parties, club facilities, Boy Scout activities, material relief, etc.).

² See Proceedings of American Association of Workers for Blind, 1925, p. 195.

³ Of ex-pupils of the Pennsylvania Institution 42.4 per cent are members of the church. Publications of Pennsylvania Institution, no. 3, 1924, p. 20 ("What Can the Blind Do?"). In some city missions there is special work for the blind. On church work for the blind, see Proceedings of American Association of Workers for Blind, 1911, p. 84.

the Promotion of Church Work among the Blind, the embossing of books of the church service being a special activity. By the Lutheran Church there are maintained special missions for the blind in certain areas. In the Home Mission Council of Protestant Churches special attention is given to the blind, which includes the preparation of reading matter.¹ In the Federation of Catholic Charities there is a special committee on work for the blind, which is also true of Catholic charitable bodies in some of the larger cities. In the National Federation of Catholic Alumnae there is a department for the blind, with local chapters; while by certain organizations of women, as the Children of Mary and the Circle of St. Margaret's Daughters, special aid is rendered.² By the National Council of Jewish Women efforts have been made to discover blind persons and to render them appropriate service, with local branches in many cities and in most States, and with possible special local committees.³ By branches of the Young Men's Christian Association attempt has sometimes been made to visit the blind in their homes, to furnish guides for them, and otherwise to help them.⁴ With such organizations as the Shut-in Society an important object has often been that of reading to the blind and like service.⁵ In a certain number of women's clubs and social service leagues efforts are made to reach and assist some of the blind, which is also true of a few civic clubs of other kinds.⁶ By some fraternal orders and service clubs (notably the Lions and Rotary clubs) special attention is given to the blind.⁷ Charitable societies sometimes include the blind in one

¹ See *ibid.*, 1925, p. 137.

² See Proceedings of National Conference of Catholic Charities, 1912, p. 203.

³ See Proceedings of National Conference of Jewish Charities, 1908, p. 28; *Jewish Charities*, April, 1914; v., 1915, p. 302; National Council of Jewish Women, "Plan of Work of Committee on Blind," 1911. In New York there is also a Jewish Guild for the Blind.

⁴ See *Association Men*, May 1, 1908.

⁵ In connection with the World War there was created the American, British, French, and Belgian Permanent Blind War Relief Fund for Soldiers and Sailors (now known as the American Braille Press). It was designed to assist the blind in various ways, especially in providing reeducation and special training. Nearly \$2,000,000 was secured for the purpose, \$100,000 being employed in the United States, chiefly for the Red Cross Institute for the Blind. In connection with the vocational training of persons blinded in the World War there was organized in 1917 the Red Cross Institute for the Blind, which beside the sum just mentioned, received aid from regular Red Cross funds and from the Federal Government.

⁶ Work for the blind is often a special phase in the activities of the Junior League. By women's clubs notable assistance has been rendered, especially in marketing goods of the blind and in transcribing braille. The work of some, as that of the philanthropic department of the Women's Civic Club of Chicago, has approached the work of a regular association.

⁷ Sometimes this work may assume considerable proportions. Special phases may be the providing of blind persons with white canes for walking, with radio sets or typewriters, with transportation in particular cases, and with outings, in addition to the supplying of eye glasses to needy school children. See Proceedings of American Association of Workers for Blind, 1927, p. 167; Proceedings of American Association of Instructors of Blind, 1930, p. 515; *Outlook for Blind*, xxvii., 1933, p. 30.

of their departments or bureaus, at times coöperating with regular associations.¹ Social settlements and kindred organizations also occasionally prove of service of one form or another to the blind. Museums and similar institutions lend special facilities for attendance by the blind. By several music schools or music school settlements special provision has been made for the blind (possibly including special scholarships). In reading, sewing, and in similar circles the blind not infrequently constitute a special object of concern. By certain organizations of youths, as Boy Scouts or Camp Fire Girls, assistance is tendered the blind and service as guides, in transporting articles manufactured by them, etc. Here and there volunteer readers offer their services for the blind.²

GENERAL DONATIONS FOR BENEFIT OF BLIND

Apart from various small gifts of various kinds, monetary and other, benefactions of an appreciable size for the benefit of the blind have usually been made to some particular organization created in their behalf, as schools, workshops, associations, etc.³ There have also been occasional gifts for some particular purpose, as for investigations in the matter of desirable systems of raised print. Now and then there have been special donations for the blind of a particular community.⁴ By some common carriers, especially railroads, free transportation is allowed to the companions of blind persons (to an extent authorized by law). To a few individuals, especially those who are both blind and deaf, there have been benefactions in the form of subscriptions, donations, and legacies, sometimes for life, possibly given to some organization to hold in trust.⁵

¹ See Proceedings of American Association of Workers for Blind, 1929, p. 94; M. E. Richmond, "Social Diagnosis," 1917, p. 420. In Brooklyn, New York, the Bureau of Charities and the Association for Improving the Condition of the Poor have each a department for the blind, largely the result of a gift to each in 1912 of the sum of \$466,000, "the substantial part [of which was] to be used for the relief and aid of crippled children, and the blind." Buildings have also been given for the work. See Report of Bureau of Charities, 1914, p. 65; 1915, p. 27; Report of Association for Improving Condition of Poor, 1915, p. 14; *Outlook for Blind*, viii., 1914, p. 86.

² In organizations concerned with the rehabilitation of disabled persons there may be included provision for the blind.

³ On private pensions for the blind, see *ante*, p. 561.

⁴ In New Hampshire in 1916 a gift of \$80,000 was made for "the aid, support, maintenance, and education of the indigent blind," which is held in trust by the State, with the allowance of the sum of \$3750 annually. It is called the John Nesmith Fund, and is administered by the Governor and Council and the State department of public welfare. See Public Laws of New Hampshire, 1924, p. 421. In Minnesota there has been a donation of \$18,000 for the benefit of the blind. In Philadelphia there was created in 1909 the Blind Relief Fund, with an endowment of \$45,000, besides annual collections of one or two thousand dollars.

⁵ By the Harmon Foundation there have been special awards for the blind in recognition of meritorious conduct or achievement.

ASSOCIATIONS OF WORKERS FOR BLIND

Organizations composed of workers for the blind, that is, composed of persons directly engaged in some field of activity in their behalf, and including both the sighted and the blind, consist of several national bodies and of a number of local or State federations. The main purpose of the latter is to give the members an opportunity for mutual acquaintance, and to aid in promoting measures of common interest. Organizations of this character have been formed in New York, New Jersey, Missouri, Michigan, Nebraska, Minnesota, Wisconsin, Indiana, Washington, Maryland, Virginia, and other States.

The two national bodies are the American Association of Instructors of the Blind and the American Association of Workers for the Blind.¹ The former was created in 1853, though formal organization was not effected till 1871.² As the name implies, it is composed of persons whose immediate business is the teaching of the blind. Its meetings are held biennially in the even years.³ The American Association of Workers for the Blind began its existence as such in 1905, developing from a society of blind persons formed in 1895.⁴ Its membership includes both instructors of the blind and workers for them in various capacities, both with and without sight, other persons interested in the welfare of the blind being also admitted. Under its purview come all phases of work for the blind. Its meetings are held biennially also, in the odd years.

¹ In both organizations Canada is included. In different international congresses there have been representatives of the United States. See Report of United States Commissioner of Education, 1911, p. 598. On the World Conference on Work for the Blind, held in the United States in 1931, see Proceedings, pp. 417, 529; U. S. Stat., 1930, ch. 54; 71st Cong., 1st sess., Sen. Rep. 289, 1929; 2nd sess., H. R. Rep., 252, 1930. A world council has been organized.

² Educators of the blind have been represented for a time in the National Education Association, in the Department of Special Education.

³ A meeting of principals and teachers was held in New York in 1853, when fourteen schools, or practically all then in existence, were represented, the main purpose being to petition Congress to grant a printing subsidy and other aid for the blind. At this meeting it was called "convention." The gathering in 1871 was largely to consider the question of a uniform type. See Report of Perkins Institution, 1854, p. 20; New York Institute, 1871, p. 21; *Mentor*, ii., 1892, pp. 22, 263; *Outlook for Blind*, ii., 1908, p. 61.

⁴ This body had its origin in an association of graduates of the Missouri School in 1895, who were interested in securing provision for the higher education of the blind, the association being known as the Missouri National College Association for the Blind. In 1896 it was enlarged to include graduates of other schools, and its name was changed to the American Blind People's Higher Education and General Improvement Association. Its greatest support was found in the States of Missouri, Kansas, Iowa, Illinois, Indiana, Ohio, Michigan, South Carolina, Colorado, California, Oregon, and New York. Meetings were held in Missouri in 1896, 1897, and 1898, and in Kansas in 1899. In 1903 a meeting was held in Chicago, at which several representatives of schools for the blind were present, when the plan of a larger organization was broached. See Bulletin of Missouri National College Association for Blind, 1895; Supplemental Bulletin, 1897; Proceedings of American Association of Workers for Blind, 1905, p. 48; 1909, p. 69; 1911, p. 14; *Problem*, i., 1900, pp. 10, 50, and *passim*; *Survey*, xxvi., 1911, p. 573.

In addition, there has been created a special national organization to deal with the general problems of the blind of the United States as a whole. This is the American Foundation for the Blind, which came into being in 1921.¹ Its stated purpose is:

To collect and disseminate information regarding all phases of work for the blind, to promote State and Federal legislation in their behalf; to arrange for the establishment of needed agencies for the blind throughout the country; and to assist in increasing the efficiency of work for the blind in all particulars.²

It serves as a clearing house and bureau of information. It promotes certain activities in behalf of the blind.³ It publishes books and other literature in relation to the blind.⁴ It conducts certain forms of research as to the blind, especially upon methods of instruction of blind children, forms of apparatus to be employed by the blind in the use of raised print, and advantageous occupations for the blind (including industrial, educational, and vocational training).⁵ It seeks to have an endowment fund of \$2,000,000, part of which has been secured.⁶ It is governed by a board of trustees, some members being active workers for the blind.⁷

There are, moreover, certain smaller and less formal organizations. In several States, as well as in several cities, there are conferences from time to time of instructors of or workers for the blind. There are likewise regional conferences, composed mainly of head teachers and of executives of some particular agency for the blind.

¹ In 1921 there was proposed a national body, which was to assist in the creation of "lighthouses" for the blind in different States, in part with the coöperation of associations for the blind. It was also to serve as a clearing house and bureau of information, and to help the blind find employment. See 67th Congress, 1st sess., House of Representatives, Hearings before Committee on Judiciary (H. R. 2910, Sen. 19,144), 1921 (Incorporation of "Lighthouses for the Blind"); *Outlook for Blind*, xv., 1921, p. 88. For suggestion of a national vocation institute for the blind, with laboratory facilities, bureau of information, etc., see *Evergreen Review*, July, 1920.

² In its creation the American Association of Workers for the Blind was largely instrumental. On this organization, see *Christian Herald*, Nov. 8, 1924; *Library Journal*, xlvii., 1922, p. 11; *Outlook for Blind*, xv., 1921, pp. 92, 120; xvi., 1922, pp. 11, 42; March, 1923, pp. 5, 24; Sept., 1923, p. 2; March, 1924, p. 7; xxvii., 1933, p. 151; Proceedings of American Associations of American Instructors of and Workers for Blind, *passim*.

³ Included are such matters as the securing of Federal action for the supplying of books for the adult blind and for free transportation on railroads of companions of blind persons, the development of long-playing phonograph records, etc.

⁴ See *post*, p. 621.

⁵ Special activities have been the securing of radio sets for the blind and the providing of certain scholarships, the preparation of apparatus for use of the blind in writing, etc.

⁶ This fund is sometimes known as the Helen Keller Endowment Fund. Membership dues range from \$2 to \$1000, according to class of membership.

⁷ In 1930 there was created the Committee on Statistics of the Blind, jointly sponsored by the American Foundation for the Blind and the National Society for the Prevention of Blindness. Its object is the promotion of better methods of the collection of statistics relating to the blind.

PUBLICATIONS IN INK PRINT DEVOTED TO INTERESTS OF BLIND

Publications in ink print in the United States devoted to the interests of the blind have, as we might suppose, been rare. The one important periodical now published is *The Outlook for the Blind* (five times a year), which was established in 1907. It is issued under the auspices of the American Foundation for the Blind, with a supervising board representing schools and other organizations.¹ It is concerned with all that pertains to the interests of the blind, and constitutes a record of the present work being done for them. By the American Foundation for the Blind is also published *The Teachers Forum* (for instructors of blind children) (five times a year).

From time to time there have been publications, most often monthlies, issued at some school for the blind, chiefly devoted to the chronicling of local events.² There have been similar publications, sometimes in the nature of bulletins, by some organization concerned with the blind.³ Occasionally there have been periodicals attempted by blind persons, usually short-lived. These often contain limited matter of general interest, but are in the main confined to the peculiar problems of the blind, especially those relating to industry, pensions, and the like.⁴

¹ Publication was until 1913 by the Massachusetts Association, and until 1920 by this body and the American Association of Instructors of the Blind and the American Association of Workers for the Blind. On the need of such a periodical, see *Proceedings of American Association of Instructors of Blind*, 1896, p. 56; 1912, p. 31.

² An important school publication was *The Mentor*, by the alumni of the Perkins Institution (1891-1895). Other school publications have been *The Lens*, at the Perkins Institution (1903-1905); *The Mistletoe*, at the Iowa School (1880); *The Institution News*, at the Texas School (1892); *The Orphans' Messenger and Advocate of the Blind*, at St. Joseph's Home, New Jersey (1898); *The Ohio Harp*, at the Ohio School (1904); *The Stylus* (1907), *The Pioneer*, *The C. B. S. Quarterly*, and *The Pennant*, at the California School; and *The Royer-Greaves Monthly* (1929). Occasionally there have been "annuals" published by graduating classes. In the papers published in "dual schools" there are often departments for the blind.

³ Periodicals or bulletins issued by associations, commissions, or other organizations for the blind have included *The Beacon*, by the San Francisco Association (1917); *The Seer*, by the Pennsylvania Association (1930); *The Informer*, by the Kansas Association (1927); *Message to the Sighless*, by the New York Commission (1920); *Sunshine Bulletin*, by the International Sunshine Society (1900); *Light*, by the Braille Institute of America (1929); *And There Was Light*, by the American Braille Press (1931); *The Friendly Light Magazine*, by the Brooklyn Bureau of Charities (1920); *The Quarterly Bulletin*, by the Utah Association (1928). By the Red Cross Institute for the Blind, following the World War, was issued *The Evergreen Review*.

⁴ By the Blind People's Higher Education and General Welfare Association there have been issued, besides occasional publications, *The Weekly News-Letter* (1897) and *The Problem* (1900-1903). (See *Problem*, i., 1900, p. 1.) By the Columbia Polytechnic Institute for the Blind at Washington, D. C., have been published *The Sunless World* (1897), *The Pioneer Herald* (1900), *Talks, Tales, and Public Opinion* (1897-1911), *Voices from Darkland* (1912-1916), and *Voices* (1917-1918); and *Our Task*, by a workshop at Kansas City (1931). By the United Workers for the Blind of Missouri has been published *The World of the Blind* (1915). Other periodicals include *The Cincinnati Globe* (1915) and *Our Reporter* at Concord, Michigan, and Little Rock, Arkansas (1879-1881). See Helga Lende, "Directory of Periodicals of Special Interest to Blind," 1933.

ORGANIZATIONS COMPOSED OF BLIND PERSONS

In organizations composed largely or entirely of blind persons, there is manifested the deep-seated human desire for mutual comradeship due to a common affliction. There are felt by the blind to be problems which can be known and discussed only in a way possible to themselves, while in their contact with one another there are found an understanding and a sympathy not to be met among others.¹ Objection is sometimes raised against the "clannishness" which may result from such intercourse; but after all the harm capable of being done is small, while the satisfaction rendered is considerable. The meetings, furthermore, are hardly likely to be of sufficiently frequent occurrence to cause very great concern.²

Such organizations have not on the whole been numerous, while their membership has usually been but limited.³ In certain States there are State-wide bodies, as in Pennsylvania, Maryland, District of Columbia, Maine, Indiana, Kentucky, Michigan, Iowa, and a few other States.⁴ Their work is accomplished mainly by correspondence, with but an occasional meeting.⁵ Most of them are composed of graduates of the State school, often being in fact little more than alumni associations. Formal alumni bodies, in addition, are in connection with the Perkins Institution, the Pennsylvania Institution, the Western Pennsylvania School, and the schools in Ohio, Indiana, Illinois, Missouri, Iowa, Wisconsin, North Dakota, South Carolina, Texas, California, and other States. With several of these associations attempts are sometimes made to find employment for the blind, to provide loans for those starting out in an independent business, or otherwise to render aid. Occasionally there are special associations of

¹ Such societies rarely attain the strength of those of deaf-mutes.

² On these societies, see *Mentor*, i., 1891, p. 141; Proceedings of American Association of Workers for Blind, 1909, p. 29; Constitution and By-Laws of New York Adult Blind Aid Association, 1877; Constitution of Maine Fraternal Association of Blind, 1908; J. W. Welch, "Abilities and Achievements of Blind," 1905; bulletins of Missouri National College Association for Blind, and of American Blind People's Higher Education and General Welfare Association. For a list of societies of the blind, see American Encyclopedia and Dictionary of Ophthalmology, 1916, ix., p. 6419; C. F. F. Campbell and M. D. Campbell, "Institutions for Blind in America," 1916; L. S. Rand, "Directory of Activities for Blind in United States," 1926, 1930.

³ In California 4.3 per cent of the blind are members of such associations. See Report of California Department of Public Welfare, 1926, p. 147.

⁴ In a few cases there are separate organizations for men and for women. In a number persons with sight may become associate members. Some of the societies, both State and local, have been instrumental in securing industrial homes, in promoting pension legislation, and in initiating other measures affecting the blind. At times there have been attempts to influence political action.

⁵ Dues are in general small, never exceeding a few dollars a year, and often being but one or two. Now and then a club is the recipient of a donation. Funds are also sometimes raised by means of entertainments.

the blind engaged in a particular occupation, as newsdealers, musicians, osteopaths, etc.¹

In some of the larger cities there are one or more societies or clubs of the blind, usually of blind men, which are more compact in their organization and more specific in their purposes than are the State associations. They are formed for the promotion of fellowship and for the mutual culture and improvement of the members, keeping alive also to all questions likely to affect the blind as a class.² Some of them have mutual aid or benefit features, with the payment of a certain amount in case of sickness, disability, or death.³ In none of the societies is the membership large, only an exceptional one having as many as a hundred, and most considerably fewer. In a few States there are federations of local associations.

Associations of the blind are called by various names—united workers, progressive clubs, mutual advancement associations, brotherhoods, braille clubs, etc.

¹ With some of the special associations there is assistance from a regular association for the blind. There has been created a special organization of veterans of the World War who became blind therein. See U. S. Stat., 1924, ch. 296; 68th Cong., 1st sess., H. R. Rep. 483, 4526, 1924, Hearings before Committee on Judiciary ("To Incorporate United States Blind Veterans of World War").

² The first of these organizations seems to have been the Friedlander Union of Philadelphia, formed in 1871.

³ Where benefit features are allowed, the amount for sickness is usually \$3 or \$7 a week, continuing for six weeks, or perhaps longer, and for burial expenses from \$50 to \$100. Loans are sometimes made to the deserving.

NOTE TO CHAPTER LIII.—On associations for the blind see Louis Stricker, "Blindness in Hamilton County," 1918, pp. 65, 100; Cleveland Society for Blind, "The Blind in Cleveland," 1918; Florina Lasker, "Care and Treatment of Jewish Blind in City of New York," 1918; R. S. French, "From Homer to Helen Keller," 1932, pp. 211, 244; Winifred Holt, "Handbook for Blind and Their Friends," 1925; A. M. Shotwell, "Remonstrance and Appeal," 1910; I. M. Heywood, "On Behalf of Blind"; Frances Martin, "Elizabeth Gilbert and Her Work for Blind," 1891; C. F. F. Campbell, "Two Outstanding Educators of Blind" (Sir Francis Campbell and Robert B. Irwin), 1931; Proceedings of 1st International Conference in America on Welfare of Child, 1908, p. 306; Proceedings of New Jersey Conference of Charities and Correction, 1908, p. 216; Proceedings of Pennsylvania Conference of Charities and Correction, 1911, p. 142; Welfare Federation of Cleveland, Social Work Year Book, 1926, p. 58; Cleveland Hospital and Health Survey, 1920, p. 193; American Year Book, 1913, p. 460; Report of Brooklyn Bureau of Charities, 1930, p. 22; Ohio Bulletin of Charities and Correction, xiv., 1908, 2, March, p. 91; Cleveland Society for Blind, report, 1924; Missouri Bulletin of Charities and Correction, no. 2, 1910, p. 61; Proceedings of International Conference on Blind (England), 1905, p. 174; 1914, pp. 67, 466; Proceedings of American Association of Instructors of Blind, 1910, p. 59; Proceedings of American Association of Workers for Blind, 1907, p. 41; 1925, p. 186; 1929, p. 105; Report of Minnesota Commission for Blind, 1923, p. 94; Proceedings of Pennsylvania Association for Blind, 1929, p. 81; Report of New York Association for Blind, 1907, p. 8; Report of Massachusetts Association for Blind, 1910, p. 6; New York Association, Handbook of Blind Workers Exhibition, 1911; District of Columbia Association, Souvenir Year Book, 1914; Report of Social Service Conference, Committee on Blind, St. Louis, 1911; Constitution and By-Laws of New York Adult Blind Aid Association, 1914; Rules of Alston Relief Society for Blind, 1899; Report of Michigan Employment Institution for Blind, 1912, p. 42; Report of Louisiana School, 1916, p. 33; *Century Magazine*, lxxviii., 1914, p. 353; *Leisure Hour*, viii., 1859, p. 457; xiv., 1865, p. 482; *Sunday Magazine*, xxv., 1896, p. 741;

Quiver, xx., 1885, p. 119; *Critic*, xlvi., 1906, p. 404; *Household Words*, xix., 859, p. 321; *Everybody's Magazine*, xix., 1908, p. 498; xxi., 1909, p. 143; *New Idea Woman's Magazine*, Nov., 1907; *McCall's Magazine*, June, 1914, p. 11; *Leslie's Weekly*, Feb. 7, 1907; *Young Women's Journal* (Salt Lake City), xx., 1909, p. 177; *American Journal of Sociology*, viii., 1903, p. 687; *Delineator*, lxvii., 1906, p. 539; *Independent*, xc., 1918, p. 21; cv., 1921, p. 648; *Outlook*, lxxxiv., 1906, p. 758; lxxxv., 1907, p. 782; xcii., 1909, p. 9; xcvi., 1911, p. 48; ciii., 1913, p. 515; cxxviii., 1921, p. 200; *Scientific American*, cviii., 1913, p. 448; cxxxvi., 1927, p. 97; *Presbyterian Banner*, Dec. 20, 1923; *Lions' Club Magazine*, May, 1925; Sept., 1925; Aug., 1926; Oct., 1927; Dec., 1927; March, 1928; *Coöperation*, viii., 1908, p. 66; *Charities and Commons*, xii., 1904, p. 62; xv., 1906, pp. 362, 610, 635, 646, 674, and *passim*; xvi., 1906, pp. 393, 451, 515; xvii., 1906, pp. 405, 417; xix., 1907, p. 1100; xxxii., 1914, p. 191; xxxiv., 1915, p. 533; *Problem*, i., 1900, pp. 81, 278; ii., 1901, p. 85; *Outlook for Blind*, i., 1907, p. 121; March, 1923, p. 29; March, 1926, p. 15; Sept., 1928, p. 24; Dec., 1929, p. 24, and *passim*; *Nation's Health*, iii., 1921, p. 470; *Hospital*, lxvii., 1919, p. 55; *Modern Hospital*, ix., 1917, p. 201; xxv., 1925, p. 164; *Hospital Social Service*, vii., 1923, pp. 371, 373; viii., 1923, p. 119; xii., 1930, p. 461; *Archives of Ophthalmology*, lvii., 1928, p. 178; *Medical Journal of Australia*, vi., 1919, p. 59; *British Medical Journal*, 1923, ii., p. 1166; *Lancet*, 1917, ii., p. 654; *Lancet-Clinic*, cviii., 1912, p. 172; *Ophthalmology*, vii., 1911, p. 553. See also reports of several associations; reports of various conferences on the blind in Great Britain; reports and other publications of organizations for the blind in Great Britain.

CHAPTER LIV

PUBLIC COMMISSIONS FOR BLIND

OBJECTS AND PLANS OF COMMISSIONS

After the entry of private associations into the field of general usefulness to the blind, we might expect in time the arrival also of some analogous public agency, which in the present day would be likely to take the form of a commission or some corresponding agency. Associations have in fact rendered a twofold service. First, they have anticipated commissions and have pointed out the way for the activities of such bodies. Second, realizing the no less pronounced opportunity for action on the part of the state, they have frequently been instrumental in calling attention to the need and in securing the creation of commissions. For both the commission and the association there is abundant room in the sphere of aid for the blind, and each may be better off with the existence of the other. It has been found that the two can work hand in hand, each helping and supplementing the work of the other.¹

Yet quite apart from the promptings exercised by the labors of private organizations, it would appear probable that commissions would in time have been called into being to deal with the peculiar problems of the blind, as has been demonstrated in an actually larger number of instances by their creation without any preliminary operations conducted by private bodies. As particular needs of the blind have been made manifest to the state, one agency after another, as we have shown in our preceding pages, has been put into requisition to meet them. In the end it has usually been realized that, for the greatest and most effective service, the different agencies might be coördinated or assimilated in a comprehensive scheme of work for the blind, and that the most feasible instrument therefor would be some specific public agency, which might act both as a central organization and as a kind of clearing house. Just as a private association denotes the concentration into one body of various activities on behalf of the blind, so a public agency represents the consummation of the state's provision for them.

¹ An analogy exists in the work of a State department of public welfare and the ministrations of a private philanthropic organization. Now and then commissions have been instrumental in securing the formation of associations, especially in smaller cities.

As has been indicated, the form which a public agency for the blind would be most likely to assume at the present is that of the commission. State commissions have now become a recognized agency in the political action of many of the American Commonwealths. Their sphere and their influence have increased to a great degree since the beginning of the twentieth century, and for different affairs of the state they have been set up. For a time commissions were regarded as rather a novel feature in the work for the blind, and their operations were looked upon as somewhat in the nature of experiments. However, there has been little actual ground for questioning their success, and they perhaps have no less justification for existence than have public commissions or similar agencies in most other fields.

Commissions for the blind, then, are called into being by the circumstance which has run through all our preceding chapters, namely, that the blind are an element of the population peculiarly in need of oversight and assistance, that for due attention to them some public agency is appropriate and necessary, and that in many instances the only means available is that of the state. It possesses full powers to take comprehensive action, while behind it are all the resources which go with public authority, together with the impressiveness of its sanction. Commissions are never to be regarded as solving the problems of the blind: they do constitute a very material step in the right direction. Their very creation is evidence of the state's concern; and they serve to bring home to the public at once the needs of the blind and the importance which the state has attached to these needs.

The several activities which are open to a commission are in general the same as those which are possible to an association. Though some of these can perhaps best be done by one body, and some by the other, there is in the main no great difference beyond the fact that the commission carries with it all that is implied in the authority of the state.

The first practical task of the commission is the investigation of the condition of the blind of State-wide scope, which in itself is a measure of importance. In this way remote or isolated blind individuals may be found and their particular needs discovered. The results of such investigations as well as later acquired knowledge are to be preserved as an authentic register of the blind. With this as a basis the commission may maintain a bureau of information and advice for the assistance of the blind. It may next, in what order and to what extent it may see fit, undertake home teaching and the distributing of reading matter; make some form of industrial provision or offer some other form of industrial aid; see that all blind children are brought into school; look after the aged and infirm; extend certain relief; promote measures for the pre-

vention of blindness; and conduct such other activities as may be found practicable—some of which may hardly be attainable otherwise. It may coöperate with other agencies, whether public or private, whether for the blind or of more general character. It may assist in the creation of local agencies for the blind. With the possession by a commission of permissive powers, allowing movements as they may appear desirable, rather than under strict directions, its work is likely to prove the more effective. The possibilities of the commission may as yet be only partly discovered.

DEVELOPMENT OF COMMISSIONS: TEMPORARY COMMISSIONS

Commissions for the blind, so far as they have been established, have been of two kinds: temporary, or special, and permanent. The object of the former, which may perhaps serve with but little appropriation of funds, has chiefly been to investigate the condition of the blind, and to submit a report in respect thereto, with appropriate recommendations, and sometimes also to administer limited relief. After the fulfilling of this task, they have ceased to exist. Permanent commissions, on the other hand, not only make due inquiry into the condition of the blind, but formulate programs based upon their discoveries, and continue as established agencies of the state. It is the latter kind that has been the generally prevailing one in America, only a few of the former having been created.

The first temporary commission to be created for the blind in the United States was that of New York in 1903, when the Governor of the State was authorized to appoint one for the purpose of investigating the condition of the blind, with the preparation of a report regarding them.¹ Certain recommendations were offered by this commission, including one that it be made permanent.² A bill was passed in line with them, but was vetoed by the Governor. In 1906 another commission was sent out.³ Its task was to take a census of the blind of the State, including their ages, causes of blindness, etc., and to ascertain how far it might be possible to ameliorate their condition, with especial reference to the practicability of industrial establishments. The work of the

¹ Laws, ch. 576. The first commission for the blind might possibly be said to date from the year 1884, when the State board of charities was authorized to make an investigation of the condition of the blind, though only with reference to the feasibility of creating a special home for the indigent blind. In many cases there were investigations regarding the blind on the opening of schools for them, intended in the main to ascertain the number of pupils who might be benefited by education.

² Other noteworthy recommendations were that there be personal visitation of the blind in their homes, that industrial schools be established, that the products of the blind be sold to the several State institutions, and that a register of the blind be kept.

³ Laws, ch. 671. Special assistance was rendered by the New York Association for the Blind.

preceding commission, which had been incomplete, was continued; and among the recommendations submitted was the renewed one that the commission be made permanent. This, however, was not done till 1913.

The second State to employ a temporary commission was Maryland in 1906, its duties being to inquire into the condition of the blind, and to ascertain their capacity for industrial training.¹ Among the recommendations of the commission was one favoring its continuation, but this failed of adoption. After the lapse of some years, in 1925 a temporary commission was created in Pennsylvania.² Its recommendations were in general acted upon, including the creation of a permanent agency for the blind.³ In 1931 county officials in North Carolina were authorized to make local surveys of the blind, with report to the State school for possible recommendations.⁴

DEVELOPMENT OF COMMISSIONS: PERMANENT COMMISSIONS

The initial commission for the blind of durable nature to be established in the United States, though not called by such title, was that of Connecticut in 1893, when a special board of education for the blind was created.⁵ Its main purpose, as its name indicates, was to look after the education of blind children, but other tasks were in time recognized, as well as formally added, which gave the board the character of an actual commission.

The first permanent commission under this appellation was in Massachusetts, where it had its beginning in 1903.⁶ It was directed to investigate the condition of the blind, and to consider means of betterment. The next year the scope of the commission was broadened, an especial duty laid upon it being to inquire into the capabilities of the blind for industrial employment.⁷ The recommendations of the commission were generally adopted, the most important being that it be made permanent.⁸

¹ Laws, 1906, ch. 290; Ann. Code, 1911, p. 816. The commission was authorized to aid blind men in their homes to the extent of \$200 each and to assist other worthy blind persons in business or with tools to the extent of \$50 each.

² Laws, 1925, ch. 177; 1925, ch. 412.

³ In Illinois a special investigation of the condition of the blind was made in 1908. Report of Board of Charities, 1908, p. 70. Logically speaking, there were two other States having temporary commissions, Massachusetts and New Jersey. Though their recommendations for permanent commissions were immediately adopted, the two bodies were in fact separate ones.

⁴ Laws, 1931, ch. 155.

⁵ Laws, 1893, ch. 156; 1895, ch. 319; 1901, ch. 164; 1905, ch. 66; 1921, chs. 88, 231; Rev. Stat., 1928, §§ 1068-1080.

⁶ Laws, 1903, Res., ch. 74; 1904, Res., ch. 87; 1905, p. 510. See also Massachusetts House Document 187, 1904.

⁷ On the report rendered by this commission, see *Charities and Commons*, xv., 1906, p. 618.

⁸ In 1917 the State supervisor of administration was directed to investigate the work-

The action of Massachusetts was soon followed by that in other States. The creation of commissions for the blind or other agencies of the State with similar powers moved steadily forward in ensuing years. In 1908 action was taken by New Jersey¹ and Ohio;² in 1909, by Delaware³ and Utah;⁴ in 1911, by Illinois;⁵ in 1913, by New Hampshire,⁶ New York,⁷ and Minnesota;⁸ in 1915, by Missouri,⁹ Indiana,¹⁰ and Nebraska;¹¹ in 1917, by Tennessee¹² and Wisconsin;¹³ in 1919, by Oklahoma;¹⁴ in 1920, by Virginia;¹⁵ in 1923, by Kansas;¹⁶ in 1925, by Pennsylvania,¹⁷ Iowa,¹⁸ and Colorado;¹⁹ in 1927, by Vermont²⁰ and

ings of the commission. In 1921 a division of the blind was created in the State department of education. Laws, 1906, ch. 385; 1907, ch. 173; 1913, p. 1167; 1914, ch. 501, p. 1073; 1915, p. 172; 1916, chs. 149, 160, 201; 1917, ch. 125; 1918, chs. 141, 266; 1919, chs. 48, 350; 1920, ch. 201; 1921, ch. 486; 1924, chs. 453, 499; 1925, ch. 286; Rev. Stat., 1932, p. 846.

¹ In 1918 the work of the commission was placed under the State department of institutions and agencies. Laws, 1908, p. 731; 1909, p. 208; 1911, p. 114; 1916, chs. 17, 22; 1918, chs. 147, 348; 1919, ch. 97; 1921, ch. 231; Comp. Stat., Supp., 1924, §§ 34-275-277.

² In 1926 the work was placed under the State department of public welfare. Laws, 1908, p. 362; 1910, p. 347; 1923, p. 326; Gen. Code, 1931, §§ 154-178, 1360-1369.

³ Laws, 1909, ch. 73; 1911, p. 283; 1913, ch. 10; 1925, ch. 115; Rev. Stat., 1915, §§ 2574-2584, 3738.

⁴ Laws, 1909, p. 176; 1919, ch. 5; 1921, ch. 6; Comp. Laws, 1917, §§ 425-431.

⁵ As the division of visitation for the blind under the State department of public welfare. Laws, 1911, p. 17; 1915, p. 227; 1925, p. 264; Rev. Stat., 1931, pp. 265, 303.

⁶ The State board of public welfare was authorized to serve in the capacity of a commission. Laws, 1913, ch. 117; 1915, pp. 163, 168; 1925, p. 421; Pub. Stat., 1924, ch. 116.

⁷ In 1926 the work was placed as a bureau under the State department of social welfare. Laws, 1913, ch. 415; 1915, ch. 363; 1916, ch. 223; 1917, ch. 302; 1920, ch. 318; 1921, ch. 255; 1922, ch. 185; 1925, ch. 381; 1926, ch. 651; 1928, ch. 859; 1930, ch. 596; Cons. Laws, 1930, pp. 1918, 2168, 2691, 2692, 2828.

⁸ A "field and employment agency" was created under the State school, and in 1917 transferred to the State board of control. In 1927 a division for the blind was set up under the State department of public institutions. Laws, 1913, ch. 488; 1917, chs. 185, 346; 1921, ch. 24; 1923, ch. 336; Gen. Stat., 1927, § 4616.

⁹ In 1921 the work was placed under the State department of labor. Laws, 1915, pp. 8, 223; 1921, p. 421; Rev. Stat., 1929, §§ 8888-8898, 14194.

¹⁰ The board of trustees of the State school was empowered to act as a "board of industrial aid." Laws, 1915, ch. 59; 1921, ch. 243; Ann. Stat., 1926, §§ 4056-4067.

¹¹ The work is under a board composed of the superintendent of the State school and the executive board of the State association of workers for the blind, and in relation to the State board of control. Laws, 1915, ch. 287; 1917, chs. 233, 247; Comp. Stat., 1931, §§ 83-311-83-319.

¹² Laws, 1917, ch. 34; 1921, chs. 22, 24; 1923, ch. 7; 1926, p. 78; Code, 1931, §§ 4550-4555.

¹³ At first the State industrial commission was directed to assist the blind in securing employment. In 1923 a field agency was created under the State school, with cooperation with the State board of control. Laws, 1917, ch. 513; 1919, ch. 499; 1921, ch. 577; 1923, ch. 355; Rev. Stat., 1931, § 4712.

¹⁴ Laws, 1919, ch. 221; Comp. Stat., 1931, §§ 4359-4365.

¹⁵ Laws, 1920, ch. 487; 1922, ch. 369; 1926, ch. 509; Code, 1930, § 9782.

¹⁶ In 1927 the law creating the commission was repealed. Laws, 1923, ch. 219; 1927, ch. 41; Rev. Stat., 1923, § 74-40.

¹⁷ The work is under the State department of public welfare. Laws, 1925, ch. 412; 1929, chs. 143; Penna. Stat., Supp., 1928, p. 387.

¹⁸ Laws, 1925, ch. 75; Code, 1927, §§ 1541a1-1541a6.

¹⁹ The State workshop had previously performed certain services for the blind. Laws, 1925, ch. 60; 1927, ch. 66; Comp. Laws, Supp., 1928, §§ 737-752.

²⁰ There is a department for the blind in the State department of public welfare. Laws, 1927, ch. 37; 1929, ch. 32.

Alabama;¹ in 1928, by Louisiana² and Mississippi;³ in 1929, by Florida⁴ and Wyoming;⁵ in 1930, by Rhode Island;⁶ and in 1931, by Texas.⁷

After the introduction of commissions for the blind in the United States in the early years of the twentieth century the movement has been a fairly rapid one. At present well over one-half of the States have such bodies or other public agencies dealing with the blind. It is not unlikely that in the course of time they will be found in all.⁸ The policy may well be a permanent one.

Some of the commissions at their inception had small fields of operation; but these have in general developed and expanded with time. Some laws for commissions, furthermore, have received considerable amendment, which has had as a rule the effect of strengthening them and of extending their scope. Sometimes, on the other hand, commissions have been inaugurated with quite ambitious programs.

Most of the commissions (or other special agencies) have been secured through the efforts of friends of and workers for the blind, including sometimes associations for the blind, and to an extent also through the direct efforts of the blind themselves. In not a few instances State departments of public welfare or similar public bodies have been assiduous in their endeavors to have commissions created.⁹ Aid has also been rendered by social welfare bodies, civic organizations, women's clubs, service clubs, etc. Of later years the creation of commissions has been a special activity of the American Foundation for the Blind. In some cases, especially at the beginning period, persistent, and perhaps long-continued, efforts have been necessary to secure action; in other cases efforts have met speedier success.¹⁰

¹ In the State department of education there is "service for the blind." Laws, 1927, ch. 615; 1931, p. 814.

² Laws, 1928, ch. 101.

³ Laws, 1928, ch. 149.

⁴ Laws, 1929, ch. 13578; Cons. Gen. Laws, 1930, § 4151 (11-16).

⁵ There is a division for the blind (and the deaf) in the State department of education. Previously certain activities for the blind had been carried on by this department. Laws, 1929, ch. 160.

⁶ There is a bureau for the blind in the State department of public welfare. Laws, 1930, ch. 1590.

⁷ Laws, 1931, ch. 80, Comp. Stat., 1931, § 3207a.

⁸ In only one State has a commission been given up.

⁹ Now and then commissions have been little more than the enlargement and formalizing of work previously done by some public agency, as a State department of public welfare or of education.

¹⁰ On efforts to secure commissions, see Proceedings of New York State Conference of Charities and Correction, 1904, p. 139; *Outlook for Blind*, ix., 1916, p. 103; *Cooperation*, viii., 1908, p. 246; *New Jersey Review of Charities and Corrections*, vii., 1908, p. 150; *Charities and Commons*, xvi., 1906, p. 470; Report of Indiana Board of Charities, 1909, pp. 25, 70; 1910, p. 39; 1911, p. 31; 1912, p. 25; 1913, p. 34; Bulletin of Illinois Board of Charities, x., 1908, 3, July, p. 5; xi., 1908, 1, Dec., p. 1; xi., 1909, 2, March, p. 57; Report of Illinois Board of Charities, 1908, pp. 70, 209; 1909, p. 34; Report of Illinois State Charities Com-

ORGANIZATION OF COMMISSIONS

Commissions for the blind designated as such and without connection with other bodies are found in the States of Colorado, Connecticut,¹ Delaware, Florida, Iowa, Louisiana, Mississippi, Oklahoma, Tennessee, Texas, Utah, and Virginia. They are attached, perhaps as bureaus or divisions, to the State department of public welfare (or like body) in Illinois, Minnesota, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and Vermont. In Missouri the work is under the State department of labor. In Alabama, Massachusetts, and Wyoming it is connected with the State department of education. In Indiana, Nebraska, and Wisconsin it is more or less under the direction of the State school. Where the commission is an independent body, it usually consists of from three to seven members. They are appointed as a rule by the Governor, sometimes with the approval of the State Senate.² They usually include a physician and one or more practical workers for the blind, perhaps the head of the State school³ or other institution for the blind.⁴ Sometimes it is required that at least one member be blind, and occasionally a representative of some organization for the blind.⁵ In certain States there are included State officials or heads of State departments.⁶ In some cases no one may be a member who is connected with an existing institution for the blind.

A notable tendency, especially in the more recent years, has been, instead of the creation of a separate and distinct commission, the establishment of a special division or bureau in an already existing State department or agency, or the requisition of its services for such work. The department most often availed of is the department of public welfare (or similar department), less often the State department of education, and occasionally some other department. In case the first named department is fairly well organized, it is particularly likely to be called upon. This policy of allocating the work for the blind in

mission, 1910, p. 32; Report of Commission to Investigate Condition of Blind in State of New Jersey, 1909, pp. 11, 15; Message of Governor of Utah, 1911, p. 29; Message of Governor of Missouri, 1915, p. 12; Message of Governor of Indiana, 1915, p. 36.

¹ In Connecticut the title is State board of education of the blind.

² In Delaware members are selected by the Justices of the Superior Court. At least one must be from each county of the State.

³ As in Iowa and Louisiana.

⁴ In Colorado directors of the State workshop are members.

⁵ As in Oklahoma and Virginia.

⁶ In Connecticut there are included the Governor and the Chief Justice of the State; in Utah, the Governor; in Iowa, Louisiana, Mississippi, and Pennsylvania, the State superintendent of public instruction; in Mississippi, the head of the State department of health and the Secretary of State; and in Pennsylvania, the head of the State department of labor.

some general State department or board is not to be interpreted as indicating any lessened concern in the public treatment of the blind; it is simply in line with present-day efforts to reduce as far as possible independent agencies of government, and to concentrate all in a few general divisions. In providing for general work for the blind of a public character an encouraging feature is found in the usual avoidance of imposing it upon the State school, though this is often in close touch with a large proportion of them, and is acquainted to a greater or less extent with their needs. It is being increasingly realized that the duties of a school for the blind are really of a distinct nature; and that the concerns of the adult blind should not be confused with the education of blind children.

The amounts allowed in the different States for the work of the commissions cover no small range, being only a few thousand dollars a year in the smaller and less wealthy States and reaching a sum of considerable size in the larger and wealthier States. Seldom is the amount less than \$5000; often it is from \$5000 to \$15,000. In a few States it approaches \$100,000—perhaps more. It is largest where industrial establishments are to be provided for, or where pensions are to be included among expenditures.¹ Grants have as a rule in most States been gradually increased in the course of time.² At times in certain States no appropriations at all are made for the work.³

SCOPE OF WORK OF COMMISSIONS

The scope of the work of commissions for the blind (or corresponding agencies) varies in the several States, some having a considerably wider range than others. In many cases general blanket provisions are directly included, or may be assumed, or are to be accepted by implication—especially measures to assist the blind in employment or vocational training. In some cases there are broad expressions for the amelioration of the condition of the blind, as to increase their happiness, to make them more useful, to render them self-supporting, to improve their condition, to promote their personal, economic, social, and civic well-being, or to render proper treatment as may be necessary. (In an increasing number of laws persons with defective sight are included.) In a few cases no specific duties are enumerated. With the course of time duties of commissions have been generally expanded. There is now a tendency toward uniformity of provisions.

¹ In Minnesota the larger counties are permitted to make further grants.

² The first commissions often had sums as small as \$1500 or \$2000, seldom over \$5000, to begin operations. Now and then early funds came from the funds of an existing institution for the blind.

³ In Missouri appropriations were for a time on condition that equal amounts be received from private sources.

A duty often prescribed is the maintaining of a register of the blind, with information regarding their age, cause of blindness, physical and mental condition, capacity for industrial employment, etc. Industrial assistance of one kind or another, provision for home teaching, and measures for the prevention of blindness are other frequent requirements. In certain States the commission is to have charge of the instruction of blind children, or may otherwise assist in their education. In some it is given the administration of pensions or public relief for the blind or power to make investigations with respect thereto. In a few it may assume care of special classes, as very young blind children or the aged blind. In a few it may provide temporary relief. In a somewhat larger number no permanent relief may be undertaken. In several States action is to be taken to prevent begging by the blind. In a few surgical treatment may be provided for. In certain cases the acceptance of gifts from private sources is specially permitted. In States where there are well-organized private associations, commissions may be enjoined to cooperate with them.

In the following scheme is shown in detail the activities authorized or directed on the part of commissions:

Register of the blind to be kept: Alabama, Connecticut, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, Wisconsin.

Bureau of information and advice to be maintained: Alabama, Connecticut, Florida, Indiana, Iowa, Louisiana, Massachusetts, Mississippi, Missouri, New Hampshire, New York, Ohio, Oklahoma, Tennessee, Texas, Vermont, Virginia.

Education of blind children to be directed: Colorado, Connecticut, Delaware, New Hampshire, New Jersey, Oklahoma, Virginia.

Children to be brought into school: Connecticut, Massachusetts, Minnesota, Tennessee.

Books may be circulated: Alabama, Florida, Indiana, Massachusetts, Mississippi, New Hampshire, Tennessee, Texas, Vermont.

Home teaching may be conducted: Alabama, Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, Wyoming.

Bureau of industrial aid or employment agency or vocational guidance to be maintained: Colorado, Florida, Indiana, Iowa, Louisiana, Massachusetts, Missouri, Nebraska, New Hampshire, New York, Ohio, Rhode Island, Tennessee, Vermont, Virginia, Wisconsin.

Assistance to be rendered in finding employment: Alabama, Connecticut, Florida, Indiana, Iowa, Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire, New York, Ohio, Oklahoma, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, Wyoming.

Tools or materials (or loans) may be supplied: Alabama, Colorado, Connecticut, Florida, Iowa, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, Texas, Utah, Vermont, Wisconsin.

Home products may be marketed: Alabama, Colorado, Connecticut, Florida, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New York, Oklahoma, Texas, Utah, Vermont, Wisconsin.

Industrial shops (or salesrooms) may be established, or industrial training provided: Colorado, Connecticut, Delaware, Florida, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, New Hampshire, New York, Ohio, Rhode Island, Tennessee, Texas, Utah, Virginia, Wisconsin.

Temporary relief may be extended: Minnesota, Missouri, New Hampshire, Utah.

No permanent support to be undertaken: Alabama, Colorado, Florida, Mississippi, Missouri, New Hampshire, Tennessee, Texas, Vermont.

No grants to be for charitable purposes solely: Massachusetts, Missouri, Nebraska, New Hampshire, New York, Tennessee, Utah, Virginia.

Assistance in special studies to be afforded: Nebraska, New York.

Special needs of aged, homeless, etc., to be considered: New York, Ohio, Tennessee, Vermont, Wisconsin.

Private gifts may be received: Connecticut, Delaware, Indiana, Mississippi, Missouri, New York, Texas, Utah, Virginia.

General care to be provided for, condition to be alleviated, or well-being to be promoted: Colorado, Delaware, Minnesota, Missouri, Nebraska, New Jersey, Pennsylvania, Vermont, Wisconsin.

Begging to be discouraged: Iowa, Louisiana.

Coöperation to be maintained with local or private agencies: Massachusetts, Minnesota, New York, Pennsylvania.

Pension laws to be administered (in greater or less part): Colorado, Louisiana, Massachusetts, Minnesota, New Jersey, New York.

Children may be placed out: Connecticut, Massachusetts.

Home training to be afforded: Alabama, Indiana, Vermont.

Causes of blindness to be studied or measures to be taken for its prevention: Connecticut, Florida, Indiana, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New York, Ohio, Pennsylvania, Virginia, Wisconsin.

Surgical treatment may be provided if advisable: Massachusetts, New York.¹

PUBLIC AGENCIES OTHER THAN COMMISSIONS AFFECTING BLIND

In addition to the regularly constituted commissions or like bodies, there are in a few States agencies which serve the blind in certain

¹ In Massachusetts sight-saving classes are provided for; guides may be furnished; employment with the seeing may be attempted. In Massachusetts and New York coöperation with local authorities is authorized. In Pennsylvania the chief duty is coöperation with existing agencies. In Connecticut institutions may be inspected. In Minnesota re-education may be assisted. In Vermont beneficiaries may be sent out of the State for education. In New York aid of local character may be allowed. (In the former law of Kansas impostors were to be guarded against.) In a few cases physicians have been required to make report of cases of blindness. On the work of commissions in connection with the special training of persons blinded in industry, see *ante*, pp. 526, 532.

respects after the manner of such, and in some cases not much less effectively. In Maine, Maryland, Oregon, and Washington public workshops provide industrial assistance in the home or otherwise, more or less home teaching, etc. In the exchanges and salesrooms of certain of the special schools, especially that of the Pennsylvania Institution, there is often a more or less close approach to the work of commissions. In California the State department of public welfare conducts home teaching, industrial enterprises, etc. In other States like departments have been engaged in looking after the blind in some small way. Reference has been made to the labors of the schools, libraries, industrial establishments, and other agencies in the extension of their several activities. In Illinois cities of a population of over 500,000 (Chicago) are authorized to conduct social service work for the blind (and the deaf) upon their own account.

RESULTS OF ACTIVITIES OF COMMISSIONS

As with associations, much of the work of commissions has been considered in our discussion of efforts for the prevention of blindness, industrial provision, and other forms of work for the blind. Most of the commissions have exercised but a part of the powers entrusted to them, though nearly all have made a more or less complete registration of the blind in their several jurisdictions, while a fair proportion have initiated some form of industrial assistance.¹ The older ones have endeavored to keep in touch with the blind generally and to render appropriate assistance as far as their powers and resources have permitted.² Nearly all carry on more or less extensive campaigns to educate the public with regard to the blind, and especially with regard to the prevention of blindness.³

In most cases there is greater or less coöperation with educational, charitable, medical, and social agencies. Interchange of cases as may be necessary takes place with social agencies or with local or State welfare agencies.⁴ In connection with efforts to prevent blindness rather close relations may exist with departments of health;⁵ while in the larger States there may be a special staff of physicians and nurses. In States where special associations for the blind are to be found, attempt is usually made to coördinate as far as possible the work of the

¹ The headquarters of commissions are usually in the business section of the metropolis of the State.

² Information regarding blind persons is secured through various persons, including postmasters, clergymen, physicians, teachers, public officials, and other blind persons.

³ Newspapers and other periodicals have often been generous in lending their aid.

⁴ In Ohio counties coöperate in the care of the aged blind.

⁵ In several States there is an advisory board of physicians.

two organizations, with the avoidance of duplicated efforts.¹ For certain phases of their work the resources of commissions are at times materially supplemented by funds from private sources.²

The proportion of blind persons with whom commissions are more or less in touch ranges in the different States from about one-fifth to about nine-tenths.³ In general the work of commissions may be said to be fairly measured by the extent of their functions, by the resources at their disposal, by their experimental acquaintance with the situation, and by their willingness to engage expert direction.⁴

In a few States commissions have for a greater or less length of time been moribund or quiescent, or their work may be said to be little more than nominal.⁵ After the creation of certain ones developments have been slow, much depending upon the degree and the manner in which the public has become alive to their possibilities.

¹ In several States the commission has branch offices with the several local associations, and possibly with charitable organizations maintaining special departments for the blind.

² In several States, as Minnesota and New Hampshire, private funds for the benefit of the blind are largely administered by the special agencies for the blind.

³ In Massachusetts the different forms of service rendered and the number of blind persons affected are as follows (1931): assistance in the form of guides, clothing, vacation trips, etc., 1556; hospital arrangements, 26; financial assistance, 879; apprenticeship in shops, 4; employment in shops, 114; industrial aid in form of guides, tools, etc., 28; assistance in sale of products, 129; vacations provided, 125; gifts, 190; Christmas remembrances, 500; home teaching, 183.

⁴ Possibly the best results are in cities, where reach is easier, and more intimate contacts are possible, though the problems here are often the harder.

⁵ See Census Bureau, "The Blind in the United States: 1910," 1917, p. 311.

NOTE A TO CHAPTER LIV.—Special public measures on behalf of the blind are those of the Federal Government in 1917 and 1918 in connection with the World War. The measures enacted, while but temporary and provisional, were of novel character, being determined upon and planned beforehand, or in anticipation of possible future results, among which might be the occasioning of blindness—all in large part intended as a substitute for a regular pension system. In their bearing upon the loss of sight, these provisions (for the most part in the hands of the Bureau of War Risk Insurance under the Department of the Treasury) were of three kinds with respect to persons disabled in military (or naval) service: provisions for indemnities; provisions for insurance; and provisions for later care and treatment (besides insurance for seamen in private American employment in war zones). For certain injuries, including loss of sight, there was to be awarded by way of indemnity a sum equivalent to one's annual earnings (from \$1500 to \$5000) (with 45 per cent of such earnings in case of loss of one eye). This system of indemnity benefits embraced two distinct features: insurance without contribution by beneficiaries, and insurance with such contribution—one in the form of direct allowances or compensation in the event of disability, and the other in the form of regular insurance policies. Under the allowances there was to be granted \$100 a month for loss of both eyes, payable through life (allowances for partial disability depending upon the extent of loss of earning power)—compensation being based largely on the principles of workmen's compensation laws. Insurance was provided on the order of that afforded by regular insurance companies (but at somewhat lower rates) in sums of from \$1000 to \$10,000, with payments in monthly installments for permanent total disability (blindness not being directly mentioned), and continuing through life. With respect to care and training, persons having lost sight in military service or suffering permanent disability (including blindness), there were to be afforded facilities for "rehabilitation, reëducation, and vocational training" (with reënlistment if necessary), first under the direction of the Surgeon General of the United States Army, and later (1918) under the Federal Board for Vocational Education. Be-

sides curative and restorative treatment at all stages, vocational training, with due "occupational therapy," was to be provided as far as possible. This was to include a study of individual tastes, aptitudes, and past experiences, with investigation of possible openings and with attempts at placement therein (a special institution at Baltimore being established for the purpose)—at an already existing special institution for the blind if found best; incapable or helpless blind persons were to be cared for in special homes, or in the homes of friends or relatives; general supervision and follow-up work were to continue as long as was necessary. An organization known as the Red Cross Institute for the Blind was created to provide entertainment, to help secure employment, and to be of general assistance, provision sometimes being made for members of the family of a blind person to learn how to care for him. Funds came from the Permanent Blind Relief Fund, the Federal Government, and the American Red Cross, probably totaling close to \$1,000,000 (apart from Government allowances to individuals). Over 200 blind persons were in attendance for a greater or less length of time. In 1926 a special division was made in the Veterans' Bureau for blind persons, entry if necessary into a home for ex-soldiers now being possible. On provisions by the National Government for persons blinded in war see the following: publications of St. Dunstan's Institute; publications of Red Cross Institute for Blind; publications of United States Board of Vocational Education; D. C. McMurtrie, "Disabled Soldier," 1919, p. 120; Arnold Lawson, "War Blindness at St. Dunstan's," 1922, p. 126; R. T. McKenzie, "Reclaiming Maimed," 1918, p. 117; Winifred Holt, "Handbook for Blind and Their Friends," 1925; Winifred Holt, "Light Which Cannot Fail," 1922; Winifred Holt, "Report to Committee for Men Blinded in Battle," 1917; O. M. Sullivan and K. O. Snortum, "Disabled Persons," 1926, p. 410; Treasury Department, Bureau of War Risk Insurance, Division of Military and Naval Insurance Bulletin no. 3, 1918; Medical Department of United States Army in World War, 1923, i., p. 402; xiii., 1927; pp. 175, 237; U. S. Stat., 1917, p. 102; 1918, chs. 104, 105; United States Committee on Public Information, Official Bulletin, March 21, July 20, 1918; 65th Cong., 3rd sess., H. R. Rep. 1128, 1918; Report of Pennsylvania Institution, 1919, pp. 11, 16; 1920, p. 27; 1924, p. 36; Report of Wisconsin Board of Control, 1920, p. 215; Report of San Francisco Association for Blind, 1918, p. 33; Papers of Interallied Conference on After Care of Disabled Men, 1918, p. 277; Report of United States Board of Vocational Education, 1920, p. 92; Report of United States Veterans' Bureau, 1922, p. 303; 1923, p. 27; *Monthly Labor Review*, v., 1917, 2, Aug., pp. 92, 100; 4, Oct., p. 45; 5, Nov., p. 183; *Vocational Summary*, ii., 1920, 10, Feb., p. 177; 12, Apr., p. 216; June, p. 108; iii., 1920, July, p. 36; iv., 1921, Jan., Feb., and *passim*; Red Cross Institute for Blind, "Red Cross Institute for Blind," 1918; Proceedings of International Conference on Rehabilitation of Disabled, 1919; Proceedings of Academy of Political Science, Feb., 1918, p. 152; *Carry On*, June, July, 1918; *Harpers Weekly*, lxi., 1915, p. 319; *American Review of Reviews*, lvi., 1917, p. 401; lxi., 1920, p. 217; *Nation*, cvi., 1918, p. 158; *Independent*, xci., 1917, p. 404; *American Museum Journal*, ix., 1918, p. 565; *Journal of Political Economy*, xxvi., 1918, p. 461; *American Economic Review*, viii., 1918, p. 195; *Rehabilitation Review*, vi., 1932, pp. 66, 375, and *passim*; *Annals of American Academy of Political and Social Science*, lxxix., 1918, pp. 52, 68; lxxx., 1918, pp. 104, 117; *Survey*, xxxvii., 1916, p. 43; xxxviii., 1917, pp. 341, 456, 504, 541, 566; xxxix., 1917, p. 352; xl., 1918, pp. 40, 617; *Journal of American Medical Association*, lxx., 1918, p. 1931; lxxiii., 1919, p. 1568; *American Journal of Ophthalmology*, i. (n. s.), 1918, p. 374, ii., 1919, p. 47; *British Medical Journal*, 1918, i., p. 730; *Lancet*, 1917, i., p. 223; 1921, ii., p. 544; *New York State Journal of Medicine*, xix., 1919, p. 343; *American Journal of Clinical Medicine*, xxvi., 1919, p. 29; *American Journal of Care for Cripples*, vi., 1918, p. 41; viii., 1919, pp. 310, 314, 395, 442, and *passim*; *Modern Hospital*, xi., 1918, p. 295; xii., 1919, pp. 163, 466; xxvi., 1926, p. 382; *Reveille*, i., 1918, pp. 108, 190; *Iron Trade Review*, lxiii., 1918, p. 1294; *School and Society*, vii., 1918, p. 764; *Outlook for Blind*, xi., 1917, pp. 52, 54; xii., 1918, p. 37; 1921, xv., p. 135; xiv., 1920, p. 41; June, 1925, p. 10; *Maryland Psychiatric Quarterly*, viii., 1918, p. 19; *Scientific Monthly*, vi., 1918, p. 479; *Literary Digest*, li., 1915, p. 353; *St. Dunstan's Review*, *passim*.

NOTE B TO CHAPTER LIV.—On commissions for the blind, see Quarterly Bulletin of California Conference of Social Work, x., 1926, 1, Nov., p. 20; Ohio Bulletin of Charities and Correction, xvi., 1910, 1, Feb., p. 25; 2, May, pp. 62, 93; xviii., 1912, 1, March, p. 37; Illinois Institution Quarterly, viii., 1917, 4, Dec., pp. 102, 116; Proceedings of New Jersey Conference of Charities and Correction, 1907, p. 49; Proceedings of Pennsylvania Conference of Charities and Correction, 1911, p. 136; Proceedings of Iowa Conference of Social Work, 1924, p. 100; Report of New York State Board of Charities, 1913, 1, p. 245; Report of New Hampshire Board of Charities, 1916, p. 84; Report of Wisconsin Board of Control,

1920, p. 14; 1922, p. 56; Proceedings of American Association of Instructors of Blind, 1928, p. 395; Proceedings of American Association of Workers for Blind, 1907, p. 31; 1909, p. 93; Proceedings of National Education Association, 1916, p. 819; Report of Joint Commission on Administrative Reorganization, Ohio, 1921, p. 518; Report of United States Commissioner of Education, 1909, p. 241; Message of Governor of Missouri, 1915, p. 12; Message of Governor of Virginia, 1922, p. 18; Report of Connecticut Board of Education of Blind, 1926, p. 124; Report of Pennsylvania Commission for Blind, 1925, p. 8; Massachusetts Association for Blind, Reports of Ten-Year Survey of Work of Massachusetts Commission for Blind, 1916; Report of New York State School, 1904, p. 43; Nebraska School, 1916, p. 28; Pennsylvania Institution, 1924, p. 29; 1925, p. 96; *New Jersey Review of Charities and Correction*, Feb., 1911; *Hospital Social Service*, xiv., 1926, p. 97; *Nation's Health*, v., 1923, p. 301; *Colorado Medicine*, xxiii., 1926, p. 84; *Boston Medical and Surgical Journal*, clxxxi., 1919, p. 13; *Lancet*, 1922, ii., p. 817; *Monthly Labor Review*, xxvii., 1928, 6, Dec., p. 159; *Charities and Commons*, xv., 1906, pp. 610, 618, 621, 622, 687, 850; xviii., 1907, pp. 5, 15; xxiii., 1910, p. 437; *Survey*, xxix., 1913, p. 641; xxxi., 1914, p. 473; *Outlook for Blind*, i., 1907, p. 111; ii., 1908, p. 118; xi., 1917, p. 47; xlii., 1919, p. 59; Sept., 1924, p. 55; Dec., 1924, p. 39; Sept., 1925, p. 16; E. C. McKay, "Laws Governing State Commissions and Departments for Blind," 1932; Proceedings of Kentucky White House Conference on Child Health and Protection, 1932, p. 147. See also reports of various commissions.

PART VII

CONCLUSIONS WITH RESPECT TO WORK FOR BLIND

CHAPTER LV

CONCLUSIONS WITH RESPECT TO WORK FOR BLIND IN UNITED STATES

We have now reviewed the work for the blind in the United States. We have seen their condition, and have discerned their general needs. We have considered in detail the several measures that have been advanced to better their state, together with the general attitude that has been displayed with regard to their problems. There only remains the inquiry as to how far the treatment which we have found accorded to them appears on the whole to meet the situation set forth.

In the presence in its midst of a body of persons deprived of the sense of sight, society has a problem of rare seriousness. The exceeding difficulty of the task of providing properly for them has to be frankly recognized at the very outset. The fact of blindness immediately puts all those suffering under it in a position entirely different from that of all the other components of the population. The condition of such is of a character to require a peculiar treatment, and one for which few lessons may be gained elsewhere. Indeed, it may be open to question whether there is any other class in society in respect to which the discovery of suitable and appropriate measures is harder, and which, upon the finding and application of such measures, may be acted upon, in proportion to the numbers involved, more beneficially.

So great, in fact, is the problem created by the blind that we are constrained to ask whether in a well-ordered state there should be such a thing as blindness. It is perhaps to this phase, namely, the necessity of blindness, or whether its existence should be allowed, that, in our consideration of the relation of society to the blind, foremost attention should be directed.

For a large period of recorded time blindness has been looked upon as one of the great ordained afflictions to which human flesh is heir. It has been accepted as a natural part of the order of earthly subsistence. That a certain portion of the race should be without sight has been taken as in conformity with the course of the affairs of men. In days past there was little thought as to the possibilities of the prevention of blindness, or even of an appreciable reduction of it; and there was little questioning as to whether any fraction of the blind population might have been kept from falling into such a state.

In the process of time, however, a change has taken place. It has gradually come to be seen that there were certain individual cases of blindness which hardly seemed necessary, or which might not have occurred had proper precautions been taken. As advance has also been made in medical science, it has appeared more and more clearly that from certain diseases or injuries blindness should not have been permitted to result. With further examination of the problem, the belief has arisen that a part of the blindness which afflicts men might have been averted. Thus with increasing knowledge and with increasing concern in the matter, we have arrived at the conviction that some, perhaps much, of blindness is preventable, and that it is incumbent upon us to find means to do away with all that is so.

The present movement, moreover, in medical research and social investigation is one of prophylaxis. It is felt to be infinitely better to prevent the ills that beset the physical body or the body politic than to attempt a cure after disease has effected lodgment in the system. Today an ever increasing emphasis is placed upon the possibilities of preclusion; and in the warding off of threatening evils is often the main battle. With respect to the matter of blindness this conception has particular force. Sooner or later we are to perceive that to permit a considerable portion of the race to become sightless when such a result might have been avoided is as humanly cruel as it is economically wasteful. The issue of prevention will in time be discovered to be the fundamental one in regard to the blind; and it may well come to pass that the various measures now being planned or executed for the benefit of the sightless will be regarded as but temporary or provisional.

Nor is our conception of the preventability of blindness to a very large extent an unsubstantial one. It has in it nothing of the visionary or illusory. It is a purely practical consideration; it is a proposition scientifically demonstrable. Indeed, because of the fact that the causes of blindness are relatively less obscure than are the causes of certain other of the defects or infirmities of the human race, blindness is perhaps one of the first of such defects or infirmities that should be eradicated.

In other words, the time has arrived in human history when there is being challenged the very existence of blindness. In practical language it may now be asked whether the blind are to be regarded as a permanent element of the population, or at least whether their number may not be reduced to far smaller proportions. The primary and fundamental question before us is found to be whether it is possible to do away with the affliction known as blindness, or at all events to lessen it in very considerable measure.

At present there may be said to be a fairly well-defined field with respect to the prevention of blindness. Concretely stated, it is found that perhaps well over two-thirds, perhaps about three-fourths, of it might have been avoided by means known to us. A certain part of this is to be ascribed to infectious diseases, either affecting the eye particularly, or the consequence of disorders of more systemic character. With timely, suitable, and skilled attention in either case, including attention to the aggression of such diseases upon the organs of sight, we may be sure that a very considerable proportion of blindness from both local and general diseases may be checked.

One infectious disease in particular which has a direct bearing upon the loss of vision is most readily under our control. This is infant blindness, or ophthalmia neonatorum, which has been responsible for a distinct part of blindness—once for one-fourth or more of that existing in the special schools for the blind. By the employment of a certain easily applied prophylactic at birth, or shortly thereafter, the germ involved is definitely destroyed and the child's eyes saved. The process is such a simple one, and at such a trivial cost, that it would seem to have come into general adoption immediately after there had been knowledge of it. Such unfortunately has not proved to be the case. In many areas there has been considerable negligence. It has been necessary that the law intervene and impose the proper requirements. Enforcement of the legislation enacted has not always been of extended character; but there may now be noted an increasing insistence in this direction. In not a few communities also local authorities have taken effective action. In some localities the situation is so well in hand that there are few cases of blindness to occur from ophthalmia neonatorum.

Another disease, trachoma by name, the cause of very much blindness in certain sections of the country, likewise lends itself to simple and efficacious treatment. By the adoption of proper, and what should be general, sanitary measures, as well as by timely treatment, it may be greatly reduced in extent if not wholly eliminated. Towards the problem public attention is now being turned, which, coupled with popular educational campaigns, offers considerable promise.

Even such dread diseases of the eye as cataract and glaucoma may in an enlarging number of individual cases prove amenable to timely and skilled medical treatment. Such may also be true with respect to certain other less well-known ocular affections. For the remainder of the diseases that cause blindness we shall have to wait upon the developments of medical science, both in the study of diseases and in their treatment, though much is to be accomplished in the general

enlightment of the public with respect to them. In the preservation of the general health and in the avoidance of conditions likely to bring on an impairment of the sight, we may expect a proportionate diminution in the total amount of blindness.

In the loss of sight occurring from injuries and accidents to the eye there is no less a field for prevention. Perhaps the first step in this direction lies in the securing of proper and sufficient lighting facilities everywhere—in the home, in the school, in the workshop, and in places of public assembly of whatever kind. Happily, we may believe that an increased concern is today being displayed in the matter, and that in time to come there will be ever lessening damage to the vision from bad lighting. In this campaign there must also be warning as to the peril involved in general neglect of the eyes when they call for attention. Of the eyes of school children in particular there must be periodical examination, with proper treatment where needed. For those whose vision is seriously defective, special "sight-saving" classes are to be established. To such an extent has this last matter come to be realized that within recent years classes for children with impaired eyesight have been inaugurated in many communities; and the time is probably not far distant when they will have a place in school programs practically everywhere. Next, attention is to be given to the dangers to the eye which may result from carelessness or want of caution in certain occupations or pastimes, or in the general activities of life. To all must be brought home the realization of the risks to which the eye is exposed, with the inculcation of lessons of heed and prudence. Here, too, there is full opportunity for an organized campaign of instruction for the public.

A considerable portion of blindness from injuries is attributable to industrial conditions which are quite beyond the power of the individual to control, and for which society as a whole is mainly to blame. Dangerous occupations have exacted too heavy a toll in the way of blindness, and failure to provide adequate protection has darkened the life of many a toiler, often in its prime and vigor. The duty of furnishing proper safeguards would seem to be one imposed by ordinary solicitude; but where this is wanting, the law should see to it that in all factories and other industrial establishments in which men are engaged at work there are installed devices of a character to prevent injuries to the organ of vision. Attention should be given to protection not only against particles and objects striking the eye and against intense heat and light, but also against drugs and chemicals the fumes or vapors of which may be no less deleterious. As a final measure for saving the sight from jeopardy, there should be included in all working-

men's compensation laws definite and distinct reference to injuries to the eye, with the compensation to be afforded in the event of the loss of sight so high that it will be to the advantage of employers to equip their plants with all due safeguards.

The necessity for the adoption of safety measures for the protection of the eye is now recognized in all enlightened establishments, and in a growing number they are being to a greater or less extent installed. In the matter of legislation enacted on the subject, we find that for the most part only limited measures have been attempted. In a number of them, however, there is statutory action of one kind or another that is encouraging. Such may in fact be regarded as the entering wedge, or as the forerunner of further legislation which is to come. We may, moreover, rejoice in the fact that we are passing through an age of increasing humane concern, especially in connection with the protection of industrial workers, a concern which is being more and more reflected in the enactments written in the statute books. As this sentiment is intensified and broadened, we may expect very full measures for the prevention of injuries to the eye.

For that form of blindness which may be called hereditary, we need not have, as far as its extent is concerned, special alarm. The matter is a part of the general question of heredity, of which our knowledge is slight; but so far as we can find, the amount of blindness that is inherited is not on the whole great. In certain families a strain of blindness is plainly to be discovered; and to the possibilities in respect to these there should be full heed. The actual operations of hereditary forces are as yet very obscure—whether we regard them as manifesting themselves through particular channels, or through particular diseases; or whether we regard them to be, not so much in the transmission of blindness itself, as in the passing on of a particular disorder or affection liable to result in blindness, or of a certain predisposition or tendency to blindness. From what we are now able to learn, the diseases of hereditary character which may produce blindness are of a limited number, only a few being of any considerable extent. In consanguineous marriages there is evidently also a certain part played in the causation of blindness, though this, relatively speaking, is likewise but small. In the marriages of the blind, so far as their hereditary effects are concerned, there is, all in all, but little ground for disquietude. Such marriages are in general less frequent than those of the sighted, unions of the blind with the blind being on the whole of rather uncommon occurrence; and as a general thing they are little likely to result in blind offspring—in fact, hardly more so than are unions of the blind with the seeing. The real danger in the matter seems to lie

in the marriage of persons, whether blind or sighted, especially such as are with blind relatives, who have one of the particular diseases which are liable to be transmitted. It is here that attention is to be focused, and that perhaps drastic measures may be called for.

Our final topic in connection with the possibilities of the prevention of blindness has to do with the question of its increase or its decrease in relation to the general population in the United States. From the immediate outlook, its elimination may not be looked for in any time which we can now measure; nor perhaps can a considerable reduction be expected for some years to come. Yet the situation is distinctly an encouraging one. Though we do not possess full and accurate data to enable us to draw definite conclusions in all respects, there are certain aspects of the matter which are plainly hopeful. From what we can learn, it is hardly to be doubted that blindness among the younger portion of the population is measurably declining, and perhaps among other age groups as well—blindness in fact being struck at at practically all stages of life. In part in keeping with this, we may believe that we can discern signs of diminution in particular directions. From the statistics available, there may be perceived a decrease in blindness from many of the general diseases that have formerly occasioned it, this being especially true of those occurring in early life. That people no longer go blind from such diseases seems fast coming true. In blindness from certain affections pertaining more directly to the eye what evidence we have points to an appreciable, or even material, decrease. With one disease in particular, namely, ophthalmia neonatorum, the diminution is so marked that for the country generally its all but complete disappearance is a distinct possibility; the conquest of this malady may be said now to be in the way of accomplishment.

As a further consideration, with respect to both local and general diseases, there seems reason to suspect an increase from very few, if indeed from any at all. Whatever favorable results there are in the entire matter, are probably in very large part directly traceable to more intelligent and more skilled dealing with ocular affections. At the same time we may assume that the treatment of diseases of a general character, some of which are liable to lead to blindness, is bettered with the course of the years, while improved sanitary conditions become more and more common.

With respect to accidents and injuries to the eye, the statistics which we have offer less satisfaction. Yet here too we cannot believe that the situation is other than promising. There is on foot today a movement, largely of an educational character—a “safety first” movement—which aims both to warn against accidents and to indicate

measures that will keep dangers away, in all of which is included security for the eyes. Special attention is also being given to the discovery of devices that will insure the protection of the sight; and far-visioned efforts are being increasingly put forth for their general adoption. Over against this progress there has to be set the great industrial growth of the country, with the industrial hazards falling more widely. Perhaps there may be said to be a race between such expansion of industry and the safety movement, though in the eventual ascendancy of the latter we may have greater or less faith.

The last stronghold to be conquered in our warfare for the putting of an end to blindness is probably to be that form which persists through hereditary operations. This may long remain to discomfit us; but it may be that in a future day science will here also show us the way to victory.

Finally, it is to be recorded that so serious has the matter of blindness come to be regarded, and of such importance its prevention, that there has been called into being a special organization to deal with it. This is of a country-wide scope, with coöperation from many quarters; and is engaged in a campaign both to educate the public and to secure necessary measures. In particular communities, furthermore, added efforts are being put forth in the movement.

Hence taking the situation as a whole, we may feel that there is little question that headway is being made in the prevention of blindness, and that blindness is, though perhaps not rapidly as yet, tending to decrease. Indeed, of such promise may the situation be held to be, if we but take vigorous and determined and unceasing action, that the end may be hastened in a measure which we cannot now realize. There is but one slogan for us to adopt—to speed up every effort for the prevention of blindness—every effort that will make for the keeping safe of life's most precious possession.

From the consideration of the possibilities of the prevention or elimination of blindness, we turn to the blind themselves as they exist among us. Their number in this country is, under a fairly broad definition, probably not less than one hundred thousand. Of these by far the greater number are in adult life. Blindness is found to fall with increasing frequency with advancing years, reaching its fullest extent in the later years of life. This condition may perhaps lead us to the reflection that if blindness has to cast a shadow over a portion of humankind, it is well that it chooses so many of its victims at their season of decline, thus sparing them the affliction in their time of strength.

With blindness is also found in too many instances a concomitant in

an inactive or confined life, with more or less unhappy effects upon vitality and general health. Blindness may likewise in certain instances be in accompaniment with some other affection or ailment or disorder, physical or mental, all perhaps proceeding from some common original or underlying disturbance, the full import of which is as yet but little understood.

Sightlessness to the individual involves a life of peculiar hardship, bringing further burdens in its wake. It means the perpetual loss of all things in the world that enter the mind through the avenue of the eye, instead of the daily vision that is given to other men. It means also as a rule a life of dependence, instead of a life independent and free. To many it means long enforced idleness, instead of the work of willing, waiting hands. Something more even does blindness mean. It occasions the closing of most of the occupations engaged in by men. It causes the removal of those enduring it from the ranks of their fellow men, making too often a break between mutual sympathy and understanding. It imposes a heavy strain upon the vitality. It necessitates frequent assistance from persons with sight. What information is received from outside may too often have the shape or the hue lent by the informer. A further particular unhappy concomitant consequence of the want of sight, following upon what is believed the extreme and peculiar helplessness of those in this state, lies in the very nature of their appeal to their fellow men: This one appeal is as objects of charity, and to an extent and in a degree attaching to almost no other element of the population. Their whole existence may thus be engulfed—or may be lost in the morasses of sentimentality. Such is the cost of blindness to the individual.

To the state blindness constitutes a loss no less distinct. There is meant the extraction from its economic supply of a certain number of otherwise able-bodied men, and their absence from its levy of potential workers. There is meant the existence in its midst of a group of citizens suffering under a grievous affliction. There is meant, finally, a serious financial drain upon its resources, requiring the direct expenditure annually of some twelve million dollars, and with indirect costs of possibly seventeen million, and perhaps involving a total economic loss of not far from forty million dollars.

The position to which the blind have been relegated in the consideration of the general community may be said to be indicated in two ways, both of rather passive character—in the law and in popular conceptions. In the former we have, theoretically, the fundamental regard of the state. The legal measures referring to the blind, in general little more than the registration of popular presumptions, are for the most

part expressive of a well-intentioned consideration, but, save for the granting of positive aid, are perhaps without great practical value. In the opinions held by the public at large we find presented an attitude not wholly different, yet actually to some extent disadvantageous to the blind. For their condition there is an abundant sympathy, manifested in various ways, and reflecting credit on the great heart of mankind, if not always on its powers of discernment. There has perhaps been too great an inclination to lift those without sight into an extramundane sphere, and to imagine them to live in a particularly spiritual atmosphere. Often other characteristics, some less favorable, are attributed to them—here ascription to them as a class of remarkable gifts, there doubt as to their ability to do the simplest things, everywhere failure to recognize the differences among them as individuals. The life actually lived by the blind, its limitations and its remaining possibilities, the results following from the absence of the sense of sight, for the most part of a quite natural order—such is scarcely perceived. In all this there is testimony to the benevolent and warm-hearted impulses of the public, and also to its proneness to superficial conceptions.

When we come to examine the direct or positive treatment that has been extended to the blind, we have in respect to most of it a ready commentary. In whatever policy has been accorded them, there has in general been too little heed whether this was the best for them, or whether it was likely to redound to their practical benefit. Too seldom has it been asked whether there might not be devised a really intelligent plan, based upon their actual needs, which might conduce to better and more helpful results.

If we consider the concrete lines of action calculated to deal with the problems of the blind, we find that as a usual thing it is only to the smaller portion of them that attention has been afforded in a degree commensurate with their needs. This is in the offer of educational advantages to blind children. Of the matter of education we may naturally expect the state to take full recognition, as a part, in any event, of its general educational economy. It is, however, beyond this stage that the most serious difficulties of the blind are discovered to arise, or in the years of adult life, in which the greater number are to be found.

With the adult there are two opposite courses which it is possible for the state or society to adopt. A let-alone policy may be accepted, the blind being allowed to get along as best they may. Perhaps there will be a few able to take care of themselves, and requiring no outside assistance; while some will have friends or special means to help them over the rough places. With the blind as a whole, the matter of making

out in life is to be considered their affair, and they are to go about it in whatever way they can.

The second policy is for society, acting on a new consciousness regarding the blind, to set in motion a genuine and wide program for them. A beginning may be made in a careful and thorough examination of their condition and needs. As the simplest step after the establishment of schools for the young, there may be extended educational facilities so that all the blind may be benefited by such agencies as home teaching and circulating libraries, or the full use of the printed page in their special type. There may be offered aid of a more substantial character, through the creation of special industrial establishments, or the providing of some other industrial assistance, or through the direct extension of some form of relief. There may finally come to be adopted a comprehensive scheme for all the blind with a manner of treatment appropriate to their several wants. In this there is recognition of the fact that there are in the main three classes of the blind to be considered: the young blind, or those able to be educated, those perhaps under twenty years of age; the blind of working age, mentally and physically qualified, those from twenty to fifty, or possibly to sixty; and the blind beyond such age, together with those unfitted for work, the infirm or incapacitated in general.

There are thus two extremes in the course of action in respect to the blind, between which there are any number of intermediate stages. So far as practical procedure is concerned, we may mainly expect a policy between the two, for few communities are likely now to be altogether content with the first method, and few are far enough advanced at present to demand the second.

In taking up the work for the blind as it has actually been approached in the United States, we find our first attention fixed upon the education of blind children. It may be asserted at once that provision has been made for such education in a way that is on the whole quite commendable.

Though it was largely through private enterprise in not a few cases that schools for the blind came into being, most were in operation only a short time before they were taken over by the state as public charges. The state has in the main fully recognized the importance of the education of blind children, and has undertaken this quite as fully as it has the education of its children who have sight. Half of the American Commonwealths guarantee provision for this instruction in their organic laws. In the schools the terms of admission and the general regulations have been made to conform with those of the regular schools. As a usual thing, institutional schools have been found the

most practicable arrangement, and in such most of the blind have been educated. Of late years day schools have appeared in certain of the larger cities; and it may be that a distinct place is to be found for them, though it seems likely that for the large part of blind children, especially outside the populous centers, institutions will remain necessary. As yet the day schools have had but limited effect: they may in fact be in great measure regarded as merely the extension of the activities of local public school systems. Provision for the higher education of the blind is not, relatively speaking, a matter of vital or of pressing importance, so far as the great number of them are concerned; but for those qualified for the opportunities thus to be afforded facilities of some sort are called for, preferably by means of scholarships in the several States in regular institutions of learning for the seeing.

In some instances we find institutions where both the blind and the deaf are educated together—a situation that is to be looked upon as not other than unfortunate. For the educational wants of the blind there is required an establishment of their own, where they may receive complete and undivided attention, and where their peculiar problems may alone be considered. More important still is the need of laws to compel the attendance of all blind children at the schools. In more than a few States the present situation in this respect is most deplorable. Diligent and persistent efforts should be made to find all blind children, and pleas or excuses to keep them away should not be listened to. The state should exert its every power to the end that its sightless ones, just as all others, should be given a full education.

Nearly all the schools for the blind in the United States are public institutions, relying solely on the care and support of the state for their continued existence. With a few private benefactions have been considerable, but for the larger number little aid of such kind has been received and less expected. The legislatures have looked after the support of the schools in reasonably full measure, when the general demand for public appropriations is considered. That the schools are not given full educational recognition is a grievance in some of the States, even though the matter may often be one of theoretical rather than of practical bearings. In time, however, this will most likely be changed, and the schools everywhere will come into their proper standing, to be considered only as the agencies of the state for the education of its children. Perhaps much the most regrettable factor in the conduct of the schools, so far as public action is involved, has been the introduction now and then into certain ones of politics—a thing most vicious in itself, and utterly subversive of the interests of the schools. But we have reason to hope that this is a phase that is disappearing, never to

return, and that in the future the public will hold it as not short of criminal to countenance it in a single instance.

So fully has the state entered the field of education of the blind that there has been little need for private action; and few schools of private character have been attempted—these rather in some part at least answering the purpose of homes.

It is in fact in the field of education for the blind that we have a system which can be described as fairly complete. Such education is different from the education of others only by reason of the particular means called for by the exigencies of the blind. In the courses of study provided it is in all but perfect agreement with those in schools for the seeing. The instruction of blind children has become a science; and through it valuable contributions have been rendered to the domains of general education. In literary and musical accomplishments in particular a high place may be said to have been reached. Indeed, this education of blind children is now of such a standing as to suffer in comparison with education in few other lines.

Many of the schools, however, have not been content with the work which they have done in the classroom, but have sought to follow their pupils into the world outside, and to reach other blind persons there as well. In these they have from their inception maintained an interest, which has been manifested in different ways. By whatever measures have been feasible, and without impairment to their primary duties, they have endeavored to keep in touch with such older blind, and within a certain range to be of benefit to them.

We pass now, in our consideration of the work for the blind which has been attempted in the United States, from the sphere of the education of children to that in which are concerned persons of adult years. At this point we find ourselves facing a situation quite different from that just examined. In the field which we are about to enter, action in behalf of the blind is discovered to be far from complete or general, in some communities their interests seeming to receive but small attention.

In labor for the adult blind we may begin with the simplest and most logical step, not severing altogether the educational links, but maintaining them in a new direction. To such persons instruction may be accorded, as it were, in extension courses; or there may be provided what may be called intellectual solace. This is to be done by home teaching, by the distribution of reading matter, by the offer of library privileges, and by whatever else will contribute to the inner comfort and enjoyment of the adult blind. The tender of such mental occupation is called for in peculiar degree, and it should be seen that every means

possible is employed to this end. The field work of which these ministrations may be regarded as a part is capable of indefinite expansion, and it may be made to hold in store an incalculable amount of good for the sightless.

As a systematic undertaking for the country generally, this form of aid to the blind is but beginning to be understood, though activity on the part of single agencies is of increasingly frequent occurrence. The extension of library facilities and the circulation of reading matter have both been taken up on a comparatively wide scale; while the preparation of a special literature, largely of private inception, but with highly valued subventions from the Federal Government, is under way. Most of the blind, if they or their friends display a sufficient interest, may have a considerable amount of reading for their use, and, if need be, conveyed into their homes. This includes not only books but periodicals as well, all of inestimable gain, to those who do not see. The range of matter available is, however, because of the expense involved in its production, necessarily quite limited. That a single uniform type, the want of which further restricts this literature, has not been brought into being at an earlier time is most unfortunate; but we may rejoice that the day of its coming is now at hand. With the general adoption of the new system the reading matter for the blind will be very much expanded. A further result may perhaps be that the number able to read raised print will be much increased.

The situation in regard to library facilities for the blind we find to be encouraging, both for present developments and for future probabilities. Library work reaches its greatest usefulness, not so much in providing reading rooms for the sightless as in sending books directly into their homes. Nor is opportunity for such work confined to city libraries, but is open to State libraries, libraries of schools, and other libraries. Perhaps, in part because of the generosity of the Federal Government in allowing reading matter for the blind the free use of the mails, the most satisfactory arrangement consists in a limited number of large, well-stocked centers, answering to the wants of particular territories. A laudable feature today lies in the readiness of many libraries to respond with little restriction to the calls of the blind, and in the general comity manifested between different libraries. The possibilities of the movement are in fact being more and more recognized, and the results so far accomplished are on the whole not a little gratifying.

Home teaching offers possibly the greatest field of usefulness in the way of intellectual assistance to the blind, embracing as it may every form of such aid that can be introduced. It is in fact but the logical

consequence of the work of libraries. Yet its benefit comes not merely from the offer of mental succor, but from the uses to which the hands of the beneficiaries can be put as well. It is, all in all, a kind of social service than which none other is finer. In some enlightened communities the undertaking of home teaching is under fair headway, and in certain States as a whole it is being given increasing attention. The most desirable administrative body for the conduct of the work, if under public auspices, is a State commission for the blind; but in the absence of such a body other agencies may be called into requisition.

From the examination of the several forms of intellectual provision for the blind, our concern shifts to the provision for their material relief. We may now say that we have reached the real problems of the blind. Compared with these, the other questions in relation to the sightless become simple, and their solution easy. The discovery of wise and adequate measures to meet their physical wants is, with the exception only of the matter of the prevention of blindness itself, the one overshadowing issue in all treatment of their problems.

We have dwelt with much fullness upon the economic condition of the blind as we have found it. We have been particularly anxious to learn whether with their affliction they might be expected to become a self-supporting element of the population. It is in our answer to this inquiry that we have acquaintance with the most bitter of the effects of blindness. The possession of sight means so much to the wage-earner, and constitutes such an indispensable part of his equipment, that on the loss of it nearly all the customary occupations of men are at once closed: for most of the blind industrial employment is barred. A certain number of the sightless are apparently scattered over various occupations, often those engaged in before the coming on of their adversity, some by dint of their own genius and perseverance, and others through the assistance of friends or relatives. But the gainfully employed of the blind constitute only the smaller part, their proportion being only one-third of that for the general population. In the matter of an earning capacity sufficient to supply a livelihood, a still smaller proportion reach the mark, with many it being possible to command but the scantest returns for their services. From the statistics at hand, not more than one-thirteenth of the entire number over ten years of age are able to maintain themselves; and of the entire number over twenty years of age, not more than one-third are self-supporting either in whole or in part, and not more than one-sixth entirely so. For the rest, apart from those who have means of their own, help has to come from family or friends, from private charity in some form, or from public funds in some form. A large part of the blind thus belong in the

ranks of the very poor, and their bread is often that of hard dependence.

In any attempts at the amelioration of the material condition of the blind very serious, in many respects formidable, difficulties are to be encountered. In the projection of operations of any kind as a remedy, we need to be quite sure of our steps.

If we consider what first comes to hand, namely, the extension of random, indiscriminate, or promiscuous aid, we have a practice of which there is little good that can be said. In general unrestricted and unregulated almsgiving the evils are too many to allow it more than allusion. It is not in keeping with the principles of scientific charity: the relief is without constructive values, and cannot effect permanent betterment, while a vast field is opened to impostors.

The first means deserving of more than passing attention for dealing with the problem of material relief for the blind lies in the offer of special homes. To provide for a certain number of them, as the aged and otherwise infirm, the maintenance of special homes is entitled to consideration as the method most convenient. In large cities where there may be not a few of this class, especially women, who are without habitations of their own or are uncared for, a need is likely to be felt for such establishments, as best suited to the situation. Yet considerable prudence is to be exercised in ventures of this kind, for the creation of "colonies" of portions of the population is on the whole not a desirable policy. Institutions for the blind may perhaps best be placed in the category of homes for the aged and infirm generally, and be appraised accordingly. Thus far in the United States private philanthropy has appeared most disposed to look after the interests of the blind in this regard.

There is another sort of homes in respect to which a word is to be said, namely, homes, or perhaps better nurseries, for blind babies, though the discussion of such establishments may almost as properly belong with that relating to provision for the young blind, or for those under school age. These homes are in answer to a call rather for the benefit of neglected children or children in unfavorable surroundings. They may render a distinct service with respect to the general care and health of blind children in the tender years of life, or in infancy. To the need private solicitude has responded in a few localities. In some States there has been aid for the purpose from public funds—possibly with provision at the State school. The matter is a part of the important question of the proper treatment of pre-school blind children, who, because of their peculiar weakness and helplessness, should receive particular attention, whether in special institutions or not. If

they remain in their own homes, their families should be given all necessary instruction as to their care.

Material aid to the blind, however, need not consist merely in the extension of relief to them. There is offered a means quite different in its purposes and aims. It arises from the feeling that there can be no satisfaction with any settlement of the economic problem of the blind which leaves in idleness those of them who might perchance be industrially employed, or leaves altogether dependent those who to some extent might become wage-earners. In any consideration of provision for the adult blind, we have very soon brought before us the matter of their industrial occupation.

Here, theoretically speaking, is presented the ideal solution of the great problem of the blind. Only when it is put to the test as to its being workable does it appear in its true light. From whatever point we view the question, we find it in its practical bearings to be beset with difficulties. Approach it how we may, we cannot escape the fact of the tremendous handicap which the want of sight imposes upon men who attempt to engage in occupations engaged in by men not so burdened. The situation results from the presence of their defect alone: it cannot be charged to any particular conditions, industrial or other. Schools for the education of blind children are in the main to be absolved from censure. Most of them put forth serious and intelligent efforts to make proper industrial provision, and a considerable proportion of their graduates present a rather creditable showing industrially. Though it is the unmistakable duty of the schools to do all in their power to supply to their pupils the fullest possible training based upon subsequent wants, the larger problem is quite beyond them. This problem, furthermore, is in great part one relating to persons who become blind in adult life.

The fundamental need in the entire question, if practical effect is to be given to the plan, is for a directing hand that will be with the blind in their industrial endeavors. To bring about any extensive employment for them, there must be some special provision, which often can best be accomplished by the creation of particular industrial establishments in whatever localities they may be required. The field is open both to private and to public action, with no vital difference. Action of some kind is called for by reason of the fact that the blind compose an element of the population, suffering under a great affliction, unable to look out for themselves in industrial life, and hence entitled to such appropriate assistance.

The problem of such industrial employment of the blind, while a part of the general industrial problems with which society has to deal, often

themselves not simple or easy of solution, really rests upon a distinct basis, and is to be approached separately. The difficulties are many and serious, owing, on the one hand, to the slowness with which the blind can acquire a trade, to the tediousness and the hardship with which it may be carried on, and to the requirement of a certain amount of sighted help, and owing, on the other hand, to the disadvantages under which they labor in placing on the market products to compete with those prepared under conditions not burdened with blindness. The blind who are able to be given occupation represent at best but the smaller proportion of their entire number, there being really an opening only for those of suitable age and of proper mental and physical qualifications. The range of industries, furthermore, which are suited to the blind is exceedingly limited. Finally, after all the efforts made, it is found that the net wages going into the hands of the blind are usually of modest figure. It may, in fact, not seldom be found that it costs more to provide for the blind thus than to give them outright the amount of their wages.

Yet the obstacles to the conducting of special industrial establishments for the blind are not to be taken as insurmountable or beyond help; nor is it ever to be thought that the possibilities of the situation are exhausted. What is involved in the creation of the establishments, and what may be expected from them, must be fully understood. It is in fact only by such realization that any measure of success may be insured.

With careful and scientific direction, the problem may be worked out, at least on a restricted scale, with results far other than failure. Varying factors will contribute to a favorable outcome; and some shops will doubtless fare better than others. The management of all is to be upon thoroughly practical principles, without appeal to sentiment or philanthropy, and with full consideration to the suitability of occupations, to local conditions, to the proper marketing of goods, to the betterment and extension of trade training, and to similar matters. Probably the highest efficiency will be attained by the "industrial shop," with its employees living out on the order of regular operatives in factories.

As a result of the conditions under which shops for the blind have to operate, they may not be expected to be enterprises commercially profitable. The receipts from sales meet only a part of their running expenses, including the wages paid to the blind. For the maintenance of the shops a considerable outlay may be called for from outside sources. It is perhaps this need for help which constitutes the main and essential difficulty in the whole plan. Whatever the characterization

applied to it, there may be the charge that it remains charity after all; and there may be reluctance if not demur to the advance of funds for the purpose. At this juncture, however, comes the one final justification for the shops: thus and thus alone may a considerable number of the blind able to be industrially employed become in any measure wage-earners, contributing to their own support—whereby there is conferred upon them the great blessing of mankind in the opportunity of work.

With regard to such industrial provision for the blind, it is to be said that it is not a new thing, and that it represents no new order. Consideration has been given to it practically from the beginning of organized work for the sightless in the United States; and there have been as high expectations as to what was to be achieved, in the past as any nowadays advanced, with hardly less earnest and competent endeavor. Though here and there shops which have been founded have fallen by the way, most have continued to the present time. The movement has in fact been a cumulative one, and there have never been so many establishments for the blind as there are today. As yet, however, they are not found in all sections of the country; and they afford assistance to but a small portion of those who might be so assisted. A great way has still to be gone before such provision can be called general.

Though special establishments in which blind persons may gather for labor offer a foremost means of dealing with the problem, they do not constitute the sole means of their industrial employment. There are several other forms to which attention is to be directed: the placing of the blind in regular shops or factories alongside seeing workers, the setting up of them in some kind of business undertaking, and the providing of work to be done by them in their individual homes.

With regard to the employment of the blind directly alongside the seeing, there are, because of the necessity of eyesight in so many operations, presented on the whole rather doubtful prospects. Within the powers of a very limited portion there may be found certain tasks; but the introduction of any considerable body of the blind into crafts carried on by sighted operatives is hardly now to be expected. Most in this respect will depend upon the discovery of processes possible for blind hands, and upon the convincing of employers of the qualifications of the blind therefor.

With regard to the employment of the blind in general business undertakings, there is perhaps offered somewhat greater hope, though the most favorable chances here are for a small select group who, by virtue of their general capabilities and resources, may be continued at an occupation engaged in prior to their loss of sight, or may be able

to enter a new calling. Others it may be practicable to set up in a small business, particularly with assistance from members of one's family, or with supervision by some special agency. To extend all such opportunities, as well as all other opportunities for work in closer contact with the seeing, to include an increasing number of the blind, we should strive unremittingly. The main practical consideration at present is that there be a constant lookout for openings in which the blind may be advantageously placed, especially for individual cases, here or there, or wherever they may be found.

In home work for the blind there appears to lie not a little promise, especially as regards women, though at best but very modest returns are ever likely from it; and it is probable that its scope will be materially expanded in the coming years. Its success is largely contingent upon the providing of proper facilities for the disposal of the articles produced, and upon the general acquainting of the public with these articles.

For the material benefit of the blind but one other program is to be proposed—the one ultimately to be met in any consideration of their problems. This is the offer of a pension from the state to the blind who are needy and not able to be provided for otherwise. As a broad and comprehensive plan for dealing with the wants of the blind generally, and because of its apparent simplicity and effectiveness, the pension arrangement will suggest itself very early among the measures proposed for the extension of substantial relief to them. Yet in the really logical, and in the safest, order the pension plan should come only when all other projects have had examinations; and if a favorable hearing is given, it should be regarded only as a last resort, to be accepted when all else has failed. The course, so far as it relates to gratuities to the blind, as to other incapacitated classes, and so far as it is afforded because of the condition of such persons, and not in return for services rendered, represents no small departure in our public economic procedure; and with limited actual experience upon which to go, there is involved a policy to be approached with very great caution. In its practical application, the possible dangers and abuses are not long in becoming apparent. To attempt to render "adequate" relief—even if determination should be made as to what this is—would mean such a demand upon the state's finances as to cause hesitation before the giving of assent; while it would be difficult to know the end of the clamors which might follow from other classes of persons to be made the beneficiaries of public bounties. Nor can there clearly be foreseen the effect upon the recipient or upon his relatives when there is opened a source of aid, to be had without effort on the part of the recipient, and

perhaps destroying his last attempts to provide for himself through his own initiative and labor.

Yet, grave as are the objections to the pension system, they are probably outweighed by certain positive advantages, so far as they concern that portion of the blind altogether unable to earn a wage for their living, and without any other means to depend upon for subsistence. Even though a considerable expenditure of money is called for, it must be remembered that in any other form of material aid to the class of the blind referred to, this will be no less the case, the final cost of one perhaps not being very much greater than that of the other. The plan offers relief at once definite and certain, with the further virtue of allowing the recipients to remain in their own homes. Nor does it seem altogether beyond our power to devise a system that will eliminate the main evils likely to be attendant upon such a general distribution of public bounty. On the whole, whatever may be the implications in the adoption of a pension system for a single group of the population, the arguments for such a grant for those of the blind who are in want and who cannot be helped in any other manner, are, with our possibly changing views in matters of this kind, difficult to refute.

The pension systems thus far adopted in the United States for the blind are for the most part new. Only in a portion of the States has the necessary legislation been enacted, which may be said to be feeling its way. Yet this action represents a movement of which but the beginning is now to be seen, and which may show no small expansion in future years, with the possibility that it may in time assume a regular and definite place in the general public budget. Because of our hitherto restricted experience with the policy, it is perhaps too early for us to judge to what extent it has proved a success. Probably the best thing for us now to do is to observe that the giving of pensions to the blind has had introduction as a means of ameliorating their condition. Recognizing this, it behooves us to see that the measures evolved are wise and practical, and surrounded by ample safeguards, to the end that they may be of the greatest possible benefit to the blind, and of the least possible injury. Attention will have to be directed to several very important matters, some of which may not easily be worked out. Aid should be extended to the worthy, and to them alone; it should be elastic in amount and based upon individual needs, and so devised as not to undermine the character of the recipient or to impair his willingness to work; it should be in relation to general family conditions and responsibilities; it should have reference to other possible infirmities (including old age), perhaps to be regarded as the basic consideration in

the whole matter; it should be of such size as really in some measure to meet the needs of the recipient, without imposing, in the total outlay, too great a financial strain on the public treasury; and it should be administered only under careful and efficient supervision.

But looked at in its best light, the system of pensions for the blind is seen inherently to have not a few shortcomings, and to be far from an altogether desirable arrangement. There is possible another plan for the affording of aid, which is analogous in certain respects to the pension plan, but which, being founded on entirely different principles, presents practically no objectionable features. This is indemnification for the loss of sight, which has its basis not so much in the extension of relief as such, but in the payment of compensation, so far as such is monetarily possible, by reason of and in consequence of the loss of vision. It is thus prospective in its bearings; and perhaps its greatest merit lies in the premium which is put upon the preservation of sight. The one drawback to the plan of indemnification is that it has reference largely to the future, and can have little application to the blind now with us. Yet it offers what seems the ideal solution of the problem of material assistance to persons deprived of the sense of vision, and towards its introduction and extension our main efforts in the matter should be directed.

Indemnification for the loss of sight may be had in several forms, all to a greater or less extent availed of at present, but as yet not of the far-reaching effect upon the situation which should be the case. The first is through suits at law, wherein are invoked the well-known principles of the law with respect to recovery for personal injuries from the party responsible therefor. This is the most obvious procedure when there lies a real cause for action, but it is frequently attended, especially in respect to injuries occurring in industrial employment, with uncertainty, expense, and delay. The next method is through insurance policies, or through personal insurance. Here there is called into play the general principle of insurance in that through contribution by a number of persons there is created a fund from which benefit is allowed to the person receiving a particular mishap. Such insurance may be effected in regular accident or similar companies, organized on a commercial basis; through fraternal and like orders; through labor unions; and through associations of employees, under the auspices of employers. With all these there has been greater or less experience in this country; but so far as the mass of the workers are concerned, they have had but limited effect.

The field of indemnification is not, however, left altogether in private hands; it is one into which the state can enter as well. Public

action may not only provide for employees in employments of a public nature, but may direct, and even assist in, measures applying to persons in private callings. The principle, of relatively late introduction in the United States, may now be said to have won recognition; it is becoming the basis of a definite public policy. In the several States action has been mainly taken in their workingmen's compensation laws, in which compensation is required from employers for injuries occurring to employees in the course of work. Through such measures proper relief is afforded for blindness resulting from accidents or injuries in industrial occupations, with the further very strong inducement to the introduction of due safeguards for the protection of the eye.

After this, so far as indemnification for the loss of sight is concerned, the principle will have to be extended to other persons liable to loss or impairment of sight, and not otherwise provided for, especially persons in the advanced years of life. All measures to such end, it is evident, are a part of the great matter of social insurance. In insurance, whether for accidents, for sickness, for invalidism, or for old age, there will be given a place to the loss or impairment of sight; and in all attention will be focused upon measures of prevention, both in respect to accidents and in respect to diseases either directly causing, or likely to lead to, blindness. Social insurance has now in some measure appeared above the horizon, and its wider application is among the not distant possibilities. In its bearings upon the loss of sight, we can but await its further developments, and find what it has to offer.

The matter of indemnification for loss or impairment of eyesight is not ended with a monetary allowance. Society has a further duty to assume. For persons still in the period of industrial activity, and not entirely incapacitated, provision is to be made for rehabilitation and vocational training, so that their disabilities may be minimized, and that they may be restored so far as is possible to the happy position of participants in the economic pursuits of men and of contributors to the economic wealth of the community. The procedure, while of very high social significance, is as yet far from being in an advanced state in America. Comprehensive and far-visioned efforts probably belong to a future time. The matter, when fully developed, is subject to no small extension; it may reach out far in various spheres of human affairs—alike to those affected in industry and to those affected in other walks of common life.

The foregoing constitute the main features of a wide program of work for the blind, beginning with the education of the young and extending through the according of material relief to the adult. Yet full as the program is, it is not to be regarded as complete. For the correlation and

unification of all the activities of society, as well as for the proper preliminary determination of the condition and needs of the blind, something further is demanded. This is the creation of private associations for private movements, and public commissions or similar agencies for public. In such manner the various problems presented by the blind may be duly and carefully examined, and suitable measures set in operation to meet them as a whole. Indeed, the work thus at hand is of manifold character: to seek first of all to prevent blindness, and then to look after the blind of the community or of the state, ministering to them individually or collectively as their several needs demand, or conducting whatever proceedings may be found suitable—in short, adopting comprehensive and far-reaching measures in accordance with the wants of the blind. Thus the entire gamut of beneficial service may be called forth; and life may be made infinitely brighter and more abundant for no small portion of the sightless. Indeed, so vast are the possibilities to organizations formed for the benefit of the blind that probably few if any others are qualified to serve humankind with richer or happier results.

In the idea of the public commission is perhaps contained the element of largest significance in the work for the blind today. It is the crystallization of the conviction that they have certain problems peculiar to themselves, and that these problems are of such importance to the state as properly to be taken cognizance of by it. The commission thus represents the ultimate concern of the state for the blind, with the recognition that through its machinery of organization they are to receive the special attention to which they are entitled. At the same time it is not to be understood that the field is to be preëmpted by the state, or that the state is to assume the entire task of relieving the blind. There will always remain a great work for private bodies, aside from coöperation; and there may be mutual stimulation for both. Private activity may even become of nation-wide scope, with the view not only of being prepared to consider the nation-wide problems of the blind, but of awakening concern and promoting movements with respect to smaller areas.

We have in these paragraphs surveyed the various forms of labor for the blind in the United States, noting the extent of present, and the probable direction of future, action. We have found that there is now what may be called a new basis of work for them, adopted for the reason that in more recent years we have come to see the inadequacy of a program that confined itself chiefly to the establishment of schools for the young, and failed to recognize the no less imperative claims of other groups. We have considered the aims and methods of the several

activities designed to carry into effect the new understanding, and have endeavored to ascertain the significance and actual workings of the agencies created as a result thereof. While in this there is discovered much to cheer us, the awakening is hardly yet to be called general, or the progress rapid. Comprehensive policies have been taken up in but very few States, and a beginning on a noteworthy scale in still fewer. Our large reason for encouragement lies in the circumstance that there is a growing realization of the problem, and that a movement is in fact under headway. Furthermore, we are able now to formulate a program for the betterment of the condition of the blind, with a comprehension of the most important steps to be taken, of itself a quite measurable advance.

In respect to the present trend in the work for the blind, our confidence is accordingly to be ascribed rather to the attention that is now being turned to their problems than to the actual achievements being presented. Of the latter we may point to but one form that has been general. This is the matter of education, for here the duty has been seen, and full and effective response on the whole has been made. As to the major problem, we discern that, though in not many communities may the movement be said to be wide, it is one that is unquestionably gaining in strength. In the construction and execution of intelligent programs of work for the blind, certain communities are entitled to a high place. In other communities progress is being made that, though less marked, is quite gratifying. The larger number of States now have public authority for the taking of more or less appropriate action, some of which seem well on their way to the adoption of extended measures. In the creation of commissions or similar agencies is probably marked the most decided advance in the new view of the problems of the blind, though a promising interest is being otherwise manifested. By schools for blind children a concern is being displayed outside their immediate educational tasks. Much credit is likewise to be bestowed upon those organizations formed for the purpose of helping the blind, which have often been framed along broad lines, and which have in a few instances been the forerunners of public endeavor. Finally, through every measure and every program, the entire question of action for the blind is increasingly, and on more and more sides, seen to be held fast with the question whether all this blindness should be; and we have come to understand that the first article of our faith, as well as our uppermost task, is to be the prevention of this affliction wherever it may be possible. From such attitude may be said to date the beginning of the end of blindness—so far as it may humanly be prevented.

In the consideration, however, of programs to be adopted in respect to the blind it is to be borne in mind that while in their difficulties there is much in common, there are many individual differences to be taken into account. Indeed, it may be said with much truth that there is no such thing as a "problem of the blind:" there are as many problems as there are blind persons to be dealt with. It is from this very fact that there arise the most baffling features in attempts to provide for the blind as a class or group. There are variations among them in temperament, in mental faculties, in physical health, in age, in domestic relations, in industrial experience, in social environment, in general economic conditions. Demands as to them may be rendered more pressing or less pressing according to whether a given locality is rural or urban, industrial or agricultural; according to the degree that family responsibilities are accepted; according to whether there are at hand pecuniary resources of any kind; according to the possession of individual strength and vigor, of thrift, of adaptability, and of determination; according to the recency of the affliction; according to previous education or previous occupation; and according to whatever other diverse circumstances may exist.

In all forms of service to the blind, there is also to be remembered the great part played, not by "organized" effort, but by "invisible" processes. The attentions and ministrations of a devoted wife, parent, child, or brother, and now and then of a sympathetic and practical-minded neighbor or friend, are, apart from their life-long duration, of a character and extent quite beyond recount. Here perhaps nearest of all are rendered "eyes to the blind."

But in whatever manner and in whatever measure the wants of certain of the blind are lessened or made less urgent, there remains no question, from all that has been revealed to us, that there is a large portion whose need is great, and for whom there is called the best that an intelligent and humane society can give.

For a recognition of the full demands of the blind, and the realization of the possibilities of a new order towards them, we have still a long way to go. The difficulties in getting any considerable portion of the community truly interested in them are not small. The sightless do not constitute a large part of the population, many people seldom come into contact with them, and the general public remains in comparative ignorance as to their real problems and needs. Indeed, some of the most important work yet to be done for the blind is the securing of an intelligent understanding in respect to them. When this is accomplished, the way for the betterment of the condition of the blind will be materially smoothed.

Our examination of the work for the blind is now finished. What shall we think of it and its possibilities? The blind have a great burden; but it is possible for us to lighten it for them, and to see that others will not have to bear it. Thus far in the main we have given the blind much of commiseration; but we have been too busy with other things to comprehend our entire duty towards them. All too often the great sympathy which they have wrung from us has been of no avail to them. From the compassion stirred within us has been borne fruit of little practical character. We have been ready enough to cast a pitying glance, perhaps to throw an alms, and have turned away and given no further thought. For our treatment of them we have much to reproach ourselves.

Yet in the present outlook we have somewhat to bring us cheer. It is not in what has been accomplished, but in the beginning that has been made, that we are to find encouragement. We have this feeling because increased attention is being accorded to the problems of the blind, because concern in them has become more general, and because in more quarters today there is a real awakening to the importance of the situation. From all these things it results that in certain fields earnest and well-considered movements are now being projected to reach and assist those without sight, and that efforts are being made to put the work for them on a secure and far-extending basis. There is thus a better laid plan of investigation and a more comprehensive scheme of provision than there has ever previously been, the culmination of which will mean the promotion of the welfare of the blind and of their position in the social body to a degree not before known.

It is not to be thought that a revolution is at hand in respect to the amelioration of the condition of the blind. Nor is it to be thought that their problems are on the eve of being solved. There is no solution of these problems this side of the restoration of the blind to sight. The one infinitely saddening thing in the consideration of their problems is that these can only be stated by us: their full solution is beyond us. The way in the direction of a solution, indeed, cannot be other than a slow and arduous one, as is the case with other of the problems of social import. There is no royal road thereto to be discovered. Even if we are to proceed a measurable distance on the path, it will be solely by dint of patient endeavor and persevering earnestness, accompanied with a holy zeal. Only by these things can we reach a place where we shall have any right or call to feel that we have done all that is within our hands to do for the blind.

But it may be said in truth that a movement for the betterment of the lot of the blind is now afoot, and that we are able to see brighter

prospects ahead. In the end, we must believe, every means will be taken to keep any human being from suffering blindness; and for the blind that are among us, it will be seen that the load is made less heavy, so far as it may be given us so to do. Towards such an issue events will tend if we but gird ourselves for our duty.

Our message is, then, after all, one of hope. This hope has ground in the increasingly determined efforts to reach and help all those that sit in darkness. Such may mean that a new day is dawning for the blind, in which their estate will be higher than it has ever been hitherto in the world.

Our hope goes deeper still. A far greater possibility rises before us—a possibility of such moment as to charge us with unfaltering resolve and to move us to unceasing action. For in the fullness of our faith, we may look to the coming of a time, to be brought near according as we bestir ourselves, when this affliction of the bearers of which we have written, shall be lifted from among men—when blindness itself shall be no more.

APPENDIXES

APPENDIX A

TABLES WITH RESPECT TO VARIOUS MATTERS AFFECTING BLIND

I. PERCENTAGE DISTRIBUTION OF BLIND HAVING BROTHERS OR SISTERS ACCORDING TO BLINDNESS OF PARENT

VISION OF BROTHERS AND SISTERS	PER CENT DISTRIBUTION				
	<i>Total</i>	<i>Both Parents Blind</i>	<i>Father Only Blind</i>	<i>Mother Only Blind</i>	<i>Neither Parent Blind</i>
TOTAL					
Total.....	100.0	100.0	100.0	100.0	100.0
Blind brothers and blind sisters.....	2.0	10.0	8.2	10.3	1.7
Blind brothers only.....	4.2	10.0	13.7	8.2	3.9
No sisters.....	0.7	1.7	1.4	2.5	0.7
Sisters not blind.....	3.5	8.3	12.3	5.7	3.2
Blind sisters only.....	3.5	8.3	10.4	12.1	3.2
No brothers.....	0.6	1.7	1.8	2.1	0.5
Brothers not blind.....	2.9	6.7	8.6	10.0	2.7
No blind brothers or sisters.....	90.3	71.7	67.7	69.5	91.2
Total having blind brothers.....	6.2	20.0	21.9	18.4	5.6
Total having blind sisters.....	5.6	18.3	18.6	22.4	4.9
MALE					
Total.....	100.0	100.0	100.0	100.0	100.0
Blind brothers and blind sisters.....	2.0	5.9	5.6	11.6	1.7
Blind brothers only.....	4.3	17.6	15.5	8.3	3.9
No sisters.....	0.7	2.9	0.7	2.8	0.7
Sisters not blind.....	3.5	14.7	14.8	5.4	3.2
Blind sisters only.....	3.1	8.8	9.0	11.6	2.8
No brothers.....	0.6	....	1.1	1.6	0.5
Brothers not blind.....	2.6	8.8	7.8	10.1	2.3
No blind brothers or sisters.....	90.6	67.6	70.0	68.5	91.5
Total having blind brothers.....	6.2	23.5	21.1	19.9	5.6
Total having blind sisters.....	5.1	14.7	14.6	23.3	4.5
FEMALE					
Total.....	100.0	100.0	100.0	100.0	100.0
Blind brothers and blind sisters.....	2.1	15.4	11.8	8.8	1.7
Blind brothers only.....	4.1	....	11.2	8.0	3.8
No sisters.....	0.7	....	2.6	2.1	0.6
Sisters not blind.....	3.4	....	8.6	5.9	3.2
Blind sisters only.....	4.1	7.7	12.5	12.6	3.7
No brothers.....	0.6	3.8	2.9	2.7	0.5
Brothers not blind.....	3.4	3.8	9.6	9.9	3.1
No blind brothers or sisters.....	89.8	76.9	64.5	70.5	90.8
Total having blind brothers.....	6.2	15.4	23.0	16.9	5.5
Total having blind sisters.....	6.2	23.1	24.3	21.4	5.4

BLINDNESS AND THE BLIND

II. PERCENTAGE OF BLIND HAVING BLIND BROTHERS OR SISTERS ACCORDING TO BLINDNESS OF PARENT

VISION OF BROTHERS AND SISTERS	PER CENT OF TOTAL								
	TOTAL			MALE			FEMALE		
	<i>Total</i>	<i>Father Blind</i>	<i>Mother Blind</i>	<i>Total</i>	<i>Father Blind</i>	<i>Mother Blind</i>	<i>Total</i>	<i>Father Blind</i>	<i>Mother Blind</i>
Blind brothers.....	64.6	67.9	61.0	67.3	70.3	63.9	61.4	65.0	57.8
Blind sisters.....	65.2	58.0	72.7	59.4	48.3	71.4	72.1	70.1	74.1

III. PERCENTAGE DISTRIBUTION OF BLIND HAVING CHILDREN ACCORDING TO BLINDNESS OF PARENT

VISION OF CHILDREN	PER CENT DISTRIBUTION				
	<i>Total</i>	<i>Both Parents Blind</i>	<i>Father Only Blind</i>	<i>Mother Only Blind</i>	<i>Neither Parent Blind</i>
Total.....	100.0	100.0	100.0	100.0	100.0
Blind sons and blind daughters.....	0.3	3.6	1.4	0.8	0.3
Blind sons only.....	0.8	....	2.8	2.4	0.6
No daughters.....	0.2	....	1.2	1.3	0.2
Daughters, none blind.....	0.5	....	1.6	1.1	0.5
Blind daughters only.....	0.6	10.7	1.6	0.9	0.6
No sons.....	0.2	....	0.4	....	0.2
Sons, none blind.....	0.5	10.7	1.2	0.9	0.4
No blind children.....	98.3	85.7	94.2	95.9	98.5
Total having blind sons.....	1.1	3.6	4.2	3.2	0.9
Total having blind daughters.....	0.9	14.3	3.0	1.7	0.9
Total.....	100.0	100.0	100.0	100.0	100.0
Blind sons and blind daughters.....	0.3	....	1.0	0.4	0.2
Blind sons only.....	0.6	....	2.4	1.9	0.5
No daughters.....	0.2	....	0.7	1.1	0.1
Daughters, none blind.....	0.4	....	1.7	0.7	0.4
Blind daughters only.....	0.5	18.2	1.0	1.1	0.4
No sons.....	0.1	....	0.3	....	0.1
Sons, none blind.....	0.4	18.2	0.7	1.1	0.4
No blind children.....	98.7	81.8	95.6	96.7	98.8
Total having blind sons.....	0.9	....	3.4	2.2	0.7
Total having blind daughters.....	0.7	18.2	2.0	1.5	0.7
Total.....	100.0	100.0	100.0	100.0	100.0
Blind sons and blind daughters.....	0.4	5.9	1.9	1.1	0.4
Blind sons only.....	1.0	....	3.4	3.1	0.8
No daughters.....	0.4	....	1.9	1.5	0.3
Daughters, none blind.....	0.6	....	1.5	1.5	0.6
Blind daughters only.....	0.8	5.9	2.4	0.8	0.7
No sons.....	0.3	....	0.5	....	0.3
Sons, none blind.....	0.5	5.9	1.9	0.8	0.5
No blind children.....	97.8	88.2	92.2	95.0	98.1
Total having blind sons.....	1.4	5.9	5.3	4.2	1.2
Total having blind daughters.....	1.2	11.8	4.4	1.9	1.1

BLINDNESS AND THE BLIND

IV. PERCENTAGE DISTRIBUTION OF BLIND HAVING BLIND CHILDREN ACCORDING TO BLINDNESS OF BROTHERS OR SISTERS—*Continued*

VISION OF CHILDREN	PER CENT DISTRIBUTION							
	TOTAL	BLIND BROTHERS AND BLIND SISTERS	BLIND BROTHERS ONLY			BLIND SISTERS ONLY		
			Total	No Sisters	No Blind Sisters	Total	No Brothers	No Blind Brothers
FEMALE								
Total.....	100.0	100.0	100.0	....	100.0	100.0	....	100.0
Blind sons and blind daughters...	0.5	2.9	2.3	....	1.7	1.5	....	0.3
Blind sons only.....	1.0	7.8	2.3	....	2.6	4.2	....	0.7
No daughters.....	0.3	3.9	1.1	....	1.3	2.3	....	0.2
Daughters, not blind.....	0.6	3.9	1.1	....	1.3	1.9	....	0.5
Blind daughters only.....	0.8	1.0	1.9	....	1.7	2.7	....	0.7
No sons.....	0.2	1.0	....	....	....	0.8	....	0.2
Sons, not blind.....	0.6	....	1.9	....	1.7	1.9	....	0.5
No blind children.....	97.8	88.3	93.6	....	93.9	91.6	....	98.3

V. PERCENTAGE DISTRIBUTION OF BLIND HAVING PARENT BLIND ACCORDING TO CONSANGUINITY OF PARENTS

VISION OF PARENTS	PER CENT DISTRIBUTION								
	TOTAL			MALE			FEMALE		
	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Both parents blind.....	0.2	0.1	0.1	0.2	0.2	0.1	0.2	....	0.1
One parent only blind....	4.0	4.3	3.9	3.8	4.8	3.7	4.4	3.6	4.3
Father only blind.....	2.0	2.7	2.0	2.0	3.5	2.0	2.0	1.7	2.0
Mother only blind.....	2.0	1.6	2.0	1.8	1.3	1.7	2.4	1.9	2.4
Neither parent blind.....	95.8	95.6	95.9	96.1	94.9	96.2	95.5	96.4	95.5
Total having father blind	2.2	2.8	2.1	2.2	3.7	2.1	2.2	1.7	2.1
Total having mother blind	2.2	1.7	2.1	1.9	1.5	1.8	2.5	1.9	2.5

VI. PERCENTAGE OF BLIND HAVING BLIND BROTHERS OR SISTERS OR CHILDREN ACCORDING TO CONSANGUINITY OF PARENTS

VISION OF BROTHERS OR SISTERS AND CHILDREN	PER CENT DISTRIBUTION				
	TOTAL	PARENTS FIRST COUSINS		PARENTS NOT FIRST COUSINS	
	<i>Per Cent Distribution</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>	<i>Per Cent Distribution</i>	<i>Per Cent of Total</i>
Total.....	100.0	100.0	4.7	100.0	93.4
Both blind brothers or sisters and children.....	5.1	6.3	5.8	5.0	91.9
Blind children only.....	13.6	1.3	0.4	14.1	97.4
Blind brothers or sisters only.....	81.3	92.4	5.3	80.8	92.8

VII. PERCENTAGE DISTRIBUTION OF BLIND HAVING BROTHERS OR SISTERS ACCORDING TO CONSANGUINITY OF PARENTS

VISION OF BROTHERS AND SISTERS	PER CENT DISTRIBUTION								
	TOTAL			MALE			FEMALE		
	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>	<i>Total</i>	<i>Parents First Cousins</i>	<i>Parents Not First Cousins</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Blind brothers and blind sisters.....	2.0	8.5	1.9	2.0	10.2	1.8	2.1	6.3	2.0
Blind brothers only.....	4.2	15.4	3.9	4.3	13.4	4.0	4.1	18.0	3.7
No sisters.....	0.7	2.2	0.7	0.7	2.3	0.7	0.7	2.1	0.7
Sisters not blind.....	3.5	13.2	3.2	3.5	11.1	3.3	3.4	15.9	3.1
Blind sisters only.....	3.5	15.5	3.2	3.1	13.7	2.9	4.1	18.0	3.7
No brothers.....	0.6	3.4	0.5	0.6	2.1	0.5	0.6	5.1	0.5
Brothers not blind....	2.9	12.1	2.7	2.6	11.6	2.4	3.4	12.9	3.3
No blind brothers or sisters	90.3	60.6	91.0	90.6	62.7	91.3	89.8	57.8	90.5
Total having blind brothers.....	6.2	23.9	5.8	6.2	23.6	5.8	6.2	24.3	5.7
Total having blind sisters	5.6	24.0	5.1	5.1	23.8	4.7	6.2	24.3	5.8

VIII. PERCENTAGE DISTRIBUTION OF BLIND HAVING CHILDREN ACCORDING TO CONSANGUINITY OF PARENTS

VISION OF CHILDREN	PER CENT DISTRIBUTION								
	TOTAL			MALE			FEMALE		
	Total	Parents First Cousins	Parents Not First Cousins	Total	Parents First Cousins	Parents Not First Cousins	Total	Parents First Cousins	Parents Not First Cousins
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Blind sons and blind daughters.....	0.3	...	0.3	0.3	...	0.2	0.4	...	0.5
Blind sons only.....	0.8	1.5	0.7	0.6	1.2	0.6	1.0	1.9	0.9
No daughters.....	0.2	0.7	0.2	0.2	0.6	0.1	0.4	0.9	0.3
Daughters, none blind	0.5	0.7	0.5	0.4	0.6	0.4	0.6	0.9	0.6
Blind daughters only....	0.6	0.7	0.6	0.5	1.2	0.5	0.8	...	0.8
No sons.....	0.2	...	0.2	0.1	...	0.1	0.3	...	0.3
Sons, none blind.....	0.5	0.7	0.4	0.4	1.2	0.4	0.5	...	0.5
No blind children.....	98.3	97.8	98.3	98.7	97.5	98.7	97.8	98.1	97.8
Total having blind sons..	1.1	1.5	1.1	0.9	1.2	0.8	1.4	1.9	1.4
Total having blind daughters.....	0.9	0.7	0.9	0.7	1.2	0.7	1.2	...	1.2

IX. PERCENTAGE OF EYE ACCIDENTS IN DIFFERENT OCCUPATIONS ACCORDING TO MANNER OF OCCURRENCE IN OHIO

OCCUPATION	PER CENT OF TOTAL									
	ONE EYE					BOTH EYES				
	Burns and Scalds	Contusions and Bruises	Cuts and Lacerations	Punctures	Miscellaneous	Burns and Scalds	Contusions and Bruises	Cuts and Lacerations	Punctures	Miscellaneous
Agriculture.....	8.3	...	41.7	8.3	41.7	...	...	...	...	100.0
Building erection and demolition..	11.4	2.3	37.2	1.3	47.8	31.0	...	10.0	1.0	59.1
Construction.....	6.5	3.6	40.9	3.0	46.9	20.6	...	5.9	...	73.5
Chemicals, etc.....	46.9	1.6	33.3	0.5	46.8	22.2	...	5.6	...	72.2
Clay, glass, and stone.....	7.2	0.7	43.5	1.1	47.3	28.6	...	7.9	...	63.5
Food and beverages.....	10.2	3.0	39.2	1.3	46.3	58.8	...	3.0	...	38.2
Laundry.....	24.6	1.6	24.6	1.6	47.6	...	...	...	...	100.0
Leather and leather goods.....	3.8	1.6	47.8	2.1	44.7	...	...	...	...	100.0
Lumber and wood pulp.....	2.6	2.5	44.8	2.8	47.9	22.6	3.2	3.2	...	71.0
Steel industries.....	19.3	9.1	55.5	8.9	7.2	2.1	...	0.1	...	97.7
Assembly and erecting machinery	7.2	2.1	48.3	0.5	40.8	30.8	...	15.4	...	53.8
Machinery manufacturing.....	4.0	0.8	54.6	0.9	39.6	9.9	...	29.1	...	71.0
Metal goods.....	6.5	0.7	50.7	1.1	41.0	16.4	0.1	20.0	0.2	63.3
Vehicles.....	6.2	2.4	48.4	1.7	41.3	16.5	...	8.2	...	75.3
Paper and printing.....	9.3	1.1	41.0	2.3	46.3	31.8	...	13.7	...	54.5
Rubber and cotton goods.....	9.7	3.9	31.5	1.2	53.9	37.2	...	2.4	...	60.4
Textile and clothing.....	4.6	5.2	39.7	3.5	47.1	14.9	3.5	...	...	81.6
Mining.....	1.4	6.3	53.5	1.1	37.7	27.3	...	9.1	...	63.6
Quarry and stone cutting.....	4.9	2.7	50.6	1.5	40.3	27.8	...	11.1	...	61.1
Transportation.....	3.1	3.1	46.5	...	47.3	70.0	...	...	...	30.0
Utilities.....	8.5	4.0	44.1	0.4	43.0	44.7	2.6	...	...	52.6
Trucking.....	7.1	1.6	35.7	0.8	54.8	14.3	...	14.3	...	71.4
Commercial.....	8.0	2.1	41.6	1.2	46.7	50.0	2.0	2.0	...	46.0
Clerical and professional.....	2.5	1.6	30.3	0.8	64.5	...	...	...	...	100.0
Building and grounds.....	13.0	4.1	35.0	2.7	45.2	73.3	...	...	...	26.7
Public service.....	5.2	3.7	37.6	0.5	53.0	30.8	3.8	15.4	...	50.0
Miscellaneous.....	7.5	2.0	37.8	1.0	49.7	50.0	...	...	...	50.0

X. RATIO OF BLIND TO GENERAL POPULATION BY GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISIONS	RATIO PER 1,000,000 OF GENERAL POPULATION					
	1880	1890	1900	1910	1920	1930
United States.....	976	808	852	623	497	517
New England.....	1082	929	867	624	635	484
Middle Atlantic.....	927	721	707	518	421	381
South Atlantic.....	908	834	917	643	570	558
East North Central.....	820	711	842	574	487	658
West North Central.....	1105	888	877	679	478	521
East South Central.....	1184	963	1089	835	555	612
West South Central.....	957	801	806	640	416	503
Mountain.....	1012	659	780	679	571	638
Pacific.....	698	556	685	493	423	474

XI. PERCENTAGE DISTRIBUTION OF BLIND AT DIFFERENT YEARS

AGE	PER CENT DISTRIBUTION										
	1860	GENERAL POPULATION			BLIND POPULATION						
		1860	1910	1920	As Enumerated	If Ratio of Blind to Total Population by Age Had Been Same as in 1860		If Age Distribution of General Population Had Been Same as in 1860			
						1910	1920	1910	1920	1910	1920
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Under 5 years.....	2.5	15.4	11.6	11.0	1.0	0.7	1.5	1.3	1.7	1.3	
5 to 9 years.....	4.5	13.3	10.6	10.8	2.2	2.7	2.9	2.7	3.6	4.5	
10 to 14 years.....	6.0	11.9	9.9	10.1	3.5	4.6	4.0	3.8	5.4	7.3	
15 to 19 years.....	7.0	10.7	9.9	8.9	3.9	4.7	5.1	4.4	5.5	7.5	
20 to 39 years.....	21.3	31.0	33.3	32.4	16.3	16.4	18.0	16.6	19.8	21.1	
40 to 59 years.....	22.6	13.4	17.9	19.3	23.7	23.6	23.9	24.4	23.2	22.0	
60 years or over.....	36.0	4.3	6.8	7.5	49.4	47.3	44.7	40.8	40.9	36.3	

XII. PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT LOSS OF VISION AT
DIFFERENT YEARS

AGE AT LOSS OF VISION	PER CENT DISTRIBUTION				
	1880	As Actually Reported		If Risk of Blindness at Different Ages Had Been the Same as in 1880	
		1910	1920	1910	1920
Total.....	100.0	100.0	100.0	100.0	100.0
Under 20 years.....	36.2	30.8	36.9	32.7	31.0
Under 5 years.....	21.7	16.4	20.9	19.1	18.1
Born blind.....	12.8	6.6	10.0	11.3	10.7
Under 1 year.....	2.4	5.0	5.5	2.1	2.0
1 to 4 years.....	6.4	4.8	5.4	5.6	5.4
5 to 9 years.....	6.2	5.3	6.2	5.6	5.3
10 to 19 years.....	8.4	8.3	8.2	8.0	7.6
10 to 14 years.....	4.6	4.3	4.6	4.3	4.1
15 to 19 years.....	3.9	4.0	3.5	3.7	3.6
Age not definitely reported	....	0.8	1.6	....	....
20 to 59 years.....	37.4	40.7	37.2	38.6	39.2
20 to 24 years.....	4.3	4.4	3.9	4.3	4.1
25 to 34 years.....	8.4	8.7	7.8	8.6	8.5
35 to 44 years.....	9.7	10.0	9.5	10.0	10.2
45 to 54 years.....	10.4	11.4	10.4	10.9	11.3
55 to 59 years.....	4.5	5.7	5.1	4.8	5.0
Age not definitely reported	....	0.7	0.5	....	....
60 years or over.....	26.4	28.5	26.0	28.7	29.7
60 to 79 years.....	21.9	23.3	21.5	23.9	24.8
60 to 64 years.....	6.3	6.7	6.3	6.6	7.0
65 to 69 years.....	5.7	6.2	5.5	6.3	6.4
70 to 74 years.....	5.8	6.1	5.7	6.4	6.6
75 to 79 years.....	4.1	4.3	4.0	4.6	4.8
80 years or over.....	4.5	4.7	4.1	4.8	4.9
Age not definitely reported	....	0.4	0.4	....	....

XIII. PERCENTAGE OF BLIND BY CAUSE OF BLINDNESS ACCORDING TO AGE AT LOSS OF VISION

CAUSE OF BLINDNESS	PER CENT OF TOTAL							
	1910				1920			
	Less Than 20 Years	20 to 44 Years	45 to 64 Years	65 Years or Over	Less Than 20 Years	20 to 44 Years	45 to 64 Years	65 Years or Over
Total.....	31.8	23.6	23.9	20.8	37.4	21.8	21.8	18.9
Definitely reported causes.....	30.2	25.3	24.5	20.0	33.9	23.8	23.3	19.1
Cataract.....	10.6	11.0	28.3	50.1	17.6	9.6	24.9	47.9
Glaucoma.....	3.4	14.0	51.6	31.0	5.6	13.8	47.8	32.8
Atrophy of optic nerve.....	15.5	33.0	35.0	16.5	23.0	33.9	30.2	12.9
Ophthalmia neonatorum.....	99.8	0.2	...	...	99.7	0.3	...	...
Trachoma (granular eyelids).....	28.0	32.0	26.8	13.2	33.3	31.5	25.0	10.2
Diseases of retina.....	8.6	44.3	33.3	13.8	18.7	28.1	33.3	19.3
Corneal ulcer.....	46.4	25.0	20.0	8.6	30.6	27.8	20.8	11.8
Cancer and other neoplasms.....	36.8	15.8	13.2	34.2	30.0	31.4	16.5	16.1
Diseases of iris.....	11.4	52.3	30.3	6.1	13.3	41.2	32.2	13.3
Measles.....	59.3	24.4	12.6	3.7	61.1	22.3	10.8	5.9
Meningitis.....	87.0	10.1	2.0	...	88.8	9.0	1.8	0.4
Scarlet fever.....	87.5	9.8	2.0	0.7	83.2	12.1	3.2	1.5
Kidney disease and diabetes.....	8.8	15.4	44.1	31.6	10.3	18.0	40.4	30.5
Influenza (grippe).....	14.5	17.8	37.4	30.4	19.6	21.1	35.0	24.3
Typhoid fever.....	46.7	29.7	15.6	8.0	50.6	30.0	11.2	7.2
Syphilis and locomotor ataxia.....	10.5	54.1	35.3	...	24.2	44.2	27.9	3.8
Smallpox.....	71.2	20.0	7.0	1.9	65.2	13.9	13.9	7.0
Accidents.....	32.1	40.3	18.8	8.7	33.8	37.9	20.1	8.3
Explosives (dynamite, gunpowder, etc.).....	18.2	64.7	15.1	2.0	19.5	62.0	15.9	2.6
Firearms.....	36.4	52.2	9.1	2.4	40.0	47.6	8.6	3.7
Falls.....	39.6	22.9	19.8	17.6	36.0	23.7	24.4	15.8
Flying objects (not from explosions).....	19.4	34.2	31.0	15.4	25.3	33.0	28.6	13.2
Cutting or piercing instruments.....	85.0	11.4	3.2	0.5	73.5	15.2	7.0	4.3
Burns.....	30.8	39.6	20.1	9.4	24.1	37.5	26.8	11.6
All other accidental injuries.....	31.6	34.5	22.2	11.7	32.0	34.8	22.9	9.3
Poisoning.....	10.4	44.3	31.1	14.2	21.0	38.0	20.2	11.8
Foreign substances in eye.....	14.6	34.0	35.0	16.5	25.1	37.7	27.3	10.0
All other definitely reported causes.....	46.5	21.3	18.9	13.2	39.0	23.9	21.8	14.3
Indefinitely or inaccurately reported causes.....	34.7	21.0	22.6	21.7	48.3	16.0	17.4	18.4
Congenital (cause not stated).....	100.0	...	...	...	100.0	...	...	...
Neuralgia.....	7.0	30.3	42.7	20.0	9.1	30.7	38.6	21.6
Exposure to heat.....	5.4	28.7	38.2	27.7	6.5	32.8	30.9	20.9
Sore eyes.....	50.6	28.6	14.2	6.6	58.4	23.1	12.5	6.0
All other.....	21.4	23.6	26.0	29.0	27.0	20.8	22.0	29.3
Combination of different classes of causes.....	15.1	26.8	34.1	24.0	21.3	26.2	28.4	24.1
Cause unknown or not reported.....	18.8	22.1	27.3	31.7	26.1	20.7	26.9	26.3

XIV. PERCENTAGE DISTRIBUTION OF ACCIDENTS TO EYE IN NEW YORK

MEANS	PER CENT DISTRIBUTION									
	1924		1927		1928		1929		1930	
	All	Eye	All	Eye	All	Eye	All	Eye	All	Eye
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Handling of objects.....	26.7	2.0	28.1	3.1	29.0	4.5	28.6	4.2	28.5	3.7
Handling of tools.....	6.5	28.7	7.6	26.9	7.0	26.2	7.4	24.8	7.1	24.0
Fall of person.....	16.1	0.5	18.3	0.6	18.4	0.4	19.1	0.6	19.5	1.2
Machinery, etc.....	14.7	15.9	13.2	16.8	11.7	14.7	12.4	15.2	12.5	15.3
Elevators, etc.....	3.7	0.8	2.9	0.5	3.0	0.4	2.9	0.5	3.1	0.6
Vehicles.....	8.6	0.5	9.0	1.0	8.9	0.8	8.8	1.1	8.9	0.5
Falling objects.....	6.5	6.2	6.3	1.7	6.4	1.6	6.3	2.4	6.2	1.6
Electricity, explosives, heat, etc.....	4.3	9.1	3.8	6.4	4.0	6.6	3.9	7.0	3.9	7.4
Harmful substances.....	1.4	15.0	1.3	15.7	1.4	16.5	1.5	16.7	1.6	16.0
Striking of object.....	4.3	1.4	4.9	1.0	4.9	1.4	4.7	1.2	4.6	1.4
Miscellaneous.....	7.2	25.3	4.5	27.2	4.7	26.9	4.4	26.3	4.1	28.3

XV. PERCENTAGE OF ACCIDENTS TO EYE BY MEANS IN NEW YORK

YEAR	PER CENT OF TOTAL														
	BRUISES, CRUSHES, AND ABRASIONS			BURNS AND SCALDS			CUTS, PUNC- TURES, AND LACERATIONS			FOREIGN BODIES			MISCELLANEOUS		
	<i>All</i>	<i>One Eye</i>	<i>Both Eyes</i>	<i>All</i>	<i>One Eye</i>	<i>Both Eyes</i>	<i>All</i>	<i>One Eye</i>	<i>Both Eyes</i>	<i>All</i>	<i>One Eye</i>	<i>Both Eyes</i>	<i>All</i>	<i>One Eye</i>	<i>Both Eyes</i>
1924.....	18.3	12.2	3.7	5.1	22.3	61.7	38.2	51.2	9.8	0.4	13.3	17.4	38.0	2.0	7.4
1925.....	19.6	13.3	6.8	5.2	22.0	66.2	35.2	52.8	6.8	0.3	10.1	12.7	39.7	1.8	7.5
1926.....	20.1	15.4	5.6	5.3	22.7	64.0	37.1	46.3	9.3	0.4	14.3	15.5	33.2	1.3	5.6
1927.....	19.9	15.1	11.3	5.2	22.5	63.7	37.3	43.9	7.8	0.5	17.3	11.9	32.7	1.2	5.3
1928.....	19.7	13.6	10.9	5.3	22.2	58.6	36.1	46.0	9.2	0.5	17.0	12.1	33.8	1.4	9.4
1929.....	18.8	16.7	5.8	5.3	22.2	68.4	35.1	44.8	5.3	0.4	14.6	11.7	36.6	1.7	8.8
1930.....	17.2	13.3	4.5	5.3	21.1	66.0	34.2	49.5	5.1	0.4	14.0	10.1	39.4	2.1	14.3

XVI. RATIO OF BLIND TO GENERAL POPULATION ACCORDING TO SIZE OF COMMUNITY

GEOGRAPHIC DIVISION	RATIO PER 1,000,000 OF GENERAL POPULATION			
	<i>Total</i>	<i>100,000 or over</i>	<i>25,000-100,000</i>	<i>Other Places</i>
United States.....	623	493	515	678
New England.....	624	574	464	728
Middle Atlantic.....	518	445	440	610
East North Central.....	643	472	530	725
West North Central.....	574	439	495	604
South Atlantic.....	679	645	587	689
East South Central.....	835	1035	719	823
West South Central.....	640	720	685	633
Mountain.....	679	497	507	714
Pacific.....	493	415	594	527

XVII. RATIO OF BLIND TO GENERAL POPULATION ACCORDING TO SIZE OF COMMUNITY AT DIFFERENT YEARS

YEAR	RATIO PER 1,000,000 OF GENERAL POPULATION			
	<i>Total</i>	<i>100,000 or over</i>	<i>50,000-100,000</i>	<i>Other Places</i>
1880.....	976	761	745	1012
1890.....	808	517	623	870
1910.....	623	493	483	670

XVIII. RATIO OF BLIND TO GENERAL POPULATION BY RACE ACCORDING TO
GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION	RATIO PER 1,000,000 OF GENERAL POPULATION				
	<i>Total</i>	<i>White</i>	<i>Negro</i>	<i>Indian</i>	<i>Other Colored</i>
MALE					
United States.....	560	540	718	2015	244
New England.....	700	699	797	3,538	....
Middle Atlantic.....	469	461	780	1,630	....
East North Central.....	631	618	1051	3,184	1034
West North Central.....	546	527	1203	1,902	380
South Atlantic.....	550	498	667	1,156	444
East South Central.....	649	606	759	7,026	....
West South Central.....	465	424	599	1,408	2048
Mountain.....	653	628	710	1,884	83
Pacific.....	489	482	680	3,137	211
FEMALE					
United States.....	432	423	487	1,977	149
New England.....	571	564	977	11,534	....
Middle Atlantic.....	372	369	458	2,089	695
East North Central.....	505	493	849	4,649	1582
West North Central.....	424	406	994	2,181	....
South Atlantic.....	407	381	462	593	3497
East South Central.....	459	463	447	5,202	....
West South Central.....	304	344	416	1,130	2882
Mountain.....	476	445	1084	1,537	581
Pacific.....	348	332	877	3,052	25

XIX. PERCENTAGE DISTRIBUTION AND RATIO OF BLIND BY GEOGRAPHIC DIVISIONS
ACCORDING TO AGE

GEOGRAPHIC DIVISION	<i>Un- der 5</i>	<i>5 to 9</i>	<i>10 to 14</i>	<i>15 to 19</i>	<i>20 to 24</i>	<i>25 to 44</i>	<i>45 to 64</i>	<i>65 and over</i>
	PER CENT DISTRIBUTION							
United States...	0.8	1.7	2.9	3.2	3.0	16.0	28.0	44.3
New England.....	0.9	1.2	1.9	2.5	2.9	13.9	28.5	47.2
Middle Atlantic....	1.0	1.8	3.3	3.3	3.1	15.8	30.0	41.7
East North Central.	0.7	1.1	1.8	2.0	2.2	14.4	29.2	48.6
West North Central	0.5	1.9	3.2	2.5	2.4	13.3	26.3	49.9
South Atlantic.....	1.0	2.3	3.7	4.2	4.3	20.7	29.1	34.7
East South Central	0.9	1.9	2.6	3.3	4.0	17.5	27.3	42.4
West South Central	0.9	1.8	3.2	3.9	3.5	17.0	27.6	42.1
Mountain.....	0.7	2.8	3.3	3.9	2.8	14.0	24.4	47.6
Pacific.....	0.5	1.8	4.8	4.0	3.0	12.5	26.8	46.8
	RATIO PER 1,000,000 OF GENERAL POPULATION							
	43	88	150	174	174	2778	8,276	4269
United States...	43	88	150	174	174	2778	8,276	4269
New England.....	49	57	101	137	173	2405	7,125	3455
Middle Atlantic....	48	74	135	142	135	1916	6,250	2972
East North Central.	45	67	107	127	146	2667	8,739	4593
West North Central	36	123	207	243	189	3008	9,642	4946
South Atlantic.....	48	102	176	108	242	4062	9,818	4200
East South Central	48	97	159	198	256	4249	11,047	6093
West South Central	42	81	143	180	182	3182	9,806	5120
Mountain.....	42	166	203	265	212	3217	9,559	7167
Pacific.....	29	99	258	252	168	1926	6,247	3386

XX. PERCENTAGE DISTRIBUTION OF BLIND BY SEX ACCORDING TO AGE

AGE	PER CENT DISTRIBUTION			
	BLIND		GENERAL POPULATION	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Total.....	100.0	100.0	100.0	100.0
Under 20 years.....	12.4	13.0	40.2	41.3
Under 5 years.....	0.7	0.7	10.9	11.0
5 to 9 years.....	2.7	2.7	10.7	10.9
10 to 14 years.....	4.5	4.7	10.0	10.2
15 to 19 years.....	4.4	4.9	8.7	9.2
20 to 59 years.....	43.2	35.8	52.2	51.2
20 to 29 years.....	8.0	7.8	16.8	18.0
30 to 39 years.....	9.0	7.8	15.2	14.8
40 to 49 years.....	12.0	9.0	12.0	11.0
50 to 59 years.....	14.3	11.2	8.2	7.5
60 years and over.....	44.3	51.2	7.6	7.4
60 to 69 years.....	16.2	16.5	4.9	4.6
70 to 79 years.....	16.8	18.9	2.1	2.2
80 years and over.....	11.3	15.8	0.5	0.6

XXI. RATIO OF BLIND TO GENERAL POPULATION BY AGE ACCORDING TO
GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISION AND SEX	RATIO PER 1,000,000 OF GENERAL POPULATION						
	<i>Total</i>	<i>Under 5 Years</i>	<i>5 to 9 Years</i>	<i>10 to 19 Years</i>	<i>20 to 44 Years</i>	<i>45 to 64 Years</i>	<i>65 Years and over</i>
United States	497	32	123	240	272	814	4145
Male.....	560	37	141	267	324	942	4374
Female....	432	27	105	213	218	668	3913
New England.....	635	41	145	282	296	918	4702
Male.....	700	47	165	295	359	1084	5133
Female.....	571	35	126	269	235	749	4337
Middle Atlantic....	421	23	108	223	220	696	3410
Male.....	469	24	117	242	269	822	3645
Female.....	372	21	97	205	170	562	3203
East North Central..	570	28	142	276	276	881	4497
Male.....	631	32	158	291	318	1019	4823
Female.....	505	24	125	261	230	726	4168
West North Central..	487	35	121	210	247	757	3960
Male.....	546	40	134	233	276	861	4231
Female.....	424	30	108	186	218	633	3657
South Atlantic.....	478	45	131	241	357	825	4005
Male.....	550	54	159	296	441	979	3956
Female.....	407	36	104	186	277	644	4055
East South Central..	555	39	129	263	357	1015	4916
Male.....	649	42	159	302	459	1189	5099
Female.....	459	35	97	224	261	806	4719
West South Central..	416	23	99	188	262	873	4251
Male.....	465	26	114	207	305	943	4248
Female.....	364	20	83	169	218	782	4253
Mountain.....	571	33	136	304	268	1002	6464
Male.....	653	45	158	344	306	1112	6638
Female.....	476	20	113	264	221	844	6229
Pacific.....	423	25	100	213	200	579	3204
Male.....	489	37	107	246	247	656	3417
Female.....	348	13	81	179	146	479	2946

XXIII. PERCENTAGE DISTRIBUTION OF BLIND BY AGE ACCORDING TO RACE

AGE	PER CENT DISTRIBUTION			
	<i>Total</i>	<i>White</i>	<i>Negro</i>	<i>Other Colored</i>
Total.....	100.0	100.0	100.0	100.0
Under 20 years.....	12.7	13.1	10.0	9.5
Under 5 years.....	0.7	0.7	0.6	1.4
5 to 9 years.....	2.7	2.8	2.3	1.6
10 to 14 years.....	4.6	4.8	3.4	3.2
15 to 19 years.....	4.7	4.8	3.8	3.4
20 to 59 years.....	40.1	39.0	48.6	33.3
20 to 29 years.....	7.9	7.8	8.8	6.5
30 to 39 years.....	8.5	8.2	10.9	5.1
40 to 49 years.....	10.7	10.2	14.3	8.7
50 to 59 years.....	13.0	12.7	14.7	13.0
60 years and over.....	47.3	48.0	41.3	57.2
60 to 69 years.....	16.3	16.6	14.4	18.7
70 to 79 years.....	17.7	18.1	14.5	18.9
80 years and over.....	13.2	13.3	12.4	19.5

XXIV. PERCENTAGE OF BLIND BY GEOGRAPHIC DIVISIONS ACCORDING TO AGE AT LOSS OF VISION

GEOGRAPHIC DIVISION	PER CENT OF TOTAL		
	<i>Under 20 Years</i>	<i>20 to 64 Years</i>	<i>65 Years or over</i>
United States.....	36.9	43.4	19.7
New England.....	32.1	43.9	24.0
Middle Atlantic.....	37.1	44.6	18.4
East North Central.....	35.3	43.6	21.2
West North Central.....	36.5	42.3	21.2
South Atlantic.....	42.4	41.7	16.0
East South Central.....	39.6	42.9	17.5
West South Central.....	42.1	42.2	15.7
Mountain.....	33.1	44.4	22.5
Pacific.....	33.0	46.9	20.2

XXVI. PERCENTAGE DISTRIBUTION OF BLIND BY PRESENT AGE ACCORDING TO AGE AT LOSS OF VISION

Age	PER CENT DISTRIBUTION																		
	Born, Blind	Un- der 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 34	35 to 44	45 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 or over	Un- der 20	20 to 64	65 or over
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5.....	4.9	5.4	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.4	.....	.....
Under 1.....	0.4	0.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.2	.....	.....
1 to 4.....	4.5	4.7	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.2	.....	.....
5 to 9.....	10.1	11.4	6.8	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.1	.....	.....
10 to 14.....	12.4	13.5	10.1	11.5	5.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.6	.....	.....
15 to 19.....	12.7	14.2	10.5	11.3	11.1	5.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.3	.....	.....
20 to 29.....	19.6	18.2	21.9	21.9	21.8	23.3	20.2	3.4	.....	.....	.....	.....	.....	.....	.....	.....	20.8	2.5	.....
30 to 39.....	14.4	12.8	15.9	15.0	21.7	22.8	23.1	20.8	4.4	.....	.....	.....	.....	.....	.....	.....	16.4	8.0	.....
40 to 49.....	11.1	13.1	14.4	14.2	15.4	18.5	20.0	26.0	35.4	6.5	.....	.....	.....	.....	.....	.....	14.1	15.9	.....
50 to 59.....	7.3	6.8	10.9	12.1	12.0	13.4	15.4	19.3	30.0	41.4	14.2	.....	.....	.....	.....	.....	10.1	23.1	.....
60 to 69.....	4.6	2.9	4.7	6.4	8.0	11.8	15.5	14.7	18.9	34.0	60.2	51.8	23.6	.....	.....	.....	6.1	31.2	6.8
70 to 79.....	2.2	1.4	2.0	2.9	3.0	3.1	4.7	8.4	8.5	15.1	21.8	39.1	62.8	67.6	30.8	.....	2.4	15.8	43.8
80 or over.....	0.7	0.4	0.9	0.9	1.3	1.2	1.0	1.5	2.7	3.0	3.8	9.0	13.6	32.4	69.2	100.0	0.9	3.5	49.4

XXVII. PERCENTAGE DISTRIBUTION AND RATIO OF BLIND BY MARITAL CONDITION
ACCORDING TO RACE AND NATIVITY

MARITAL CONDITION AND SEX	TOTAL	WHITE			NEGRO	INDIAN
		Total	Native	Foreign Born		
	PER CENT DISTRIBUTION					
Male.....	100.0	100.0	100.0	100.0	100.0	100.0
Single.....	34.4	35.3	38.6	21.8	27.7	28.9
Married, widowed, or divorced	65.6	64.7	61.4	78.2	72.3	71.1
Married.....	45.1	45.0	43.3	52.1	46.1	41.0
Widowed.....	18.2	17.5	15.8	24.8	22.8	26.6
Divorced.....	2.3	2.2	2.3	1.4	3.4	3.5
Female.....	100.0	100.0	100.0	100.0	100.0	100.0
Single.....	35.9	37.2	41.1	19.0	24.4	18.4
Married, widowed, or divorced	64.1	62.8	58.9	81.0	75.6	81.6
Married.....	25.7	25.8	25.6	26.6	24.7	33.3
Widowed.....	37.2	36.0	32.3	53.5	49.1	46.5
Divorced.....	1.1	1.0	1.1	0.9	1.8	1.8
	RATIO PER 1,000,000 OF GENERAL POPULATION					
Male.....	598.5	587.5	603.2	530.8	683.7	2306.0
Single.....	577.7	577.7	602.2	446.9	568.4	1890.4
Married, widowed, or divorced	598.8	582.7	592.1	554.6	688.8	2485.6
Married.....	449.6	441.6	453.9	404.5	509.7	1647.5
Widowed.....	2248.2	2186.3	2199.6	2152.7	2580.5	8054.6
Divorced.....	2125.1	2008.1	2065.9	1690.1	2847.6	8823.5
Female.....	440.5	441.3	448.4	410.0	410.4	1647.0
Single.....	569.2	583.2	587.0	546.8	405.9	1293.3
Married, widowed, or divorced	382.4	377.6	376.0	383.2	399.8	1723.3
Married.....	183.6	184.2	192.3	154.7	165.8	865.2
Widowed.....	1447.6	1453.4	1474.4	1396.8	1324.9	5750.2
Divorced.....	622.0	625.6	607.2	759.3	569.9	2421.3

XXVIII. RATIO OF BLIND BY MARITAL CONDITION ACCORDING TO AGE

AGE	RATIO PER 1,000,000 OF GENERAL POPULATION									
	MALE					FEMALE				
	SINGLE	MARRIED, WIDOWED, OR DIVORCED				SINGLE	MARRIED, WIDOWED, OR DIVORCED			
		Total	Married	Widowed	Divorced		Total	Married	Widowed	Divorced
15 years and over	737	764	573	2875	2715	770	518	249	1961	834
15 to 19 years.	289	81	73	546	....	261	21	18	163	....
20 to 24 years.	344	54	51	293	....	395	19	17	92	35
25 to 29 years.	522	98	91	272	481	652	40	38	111	....
30 to 34 years.	751	115	103	228	1140	935	69	64	150	174
35 to 44 years.	1324	261	230	680	1651	1317	140	122	303	400
45 to 54 years.	1993	525	462	1079	2404	1678	321	270	526	947
55 to 64 years.	3412	1114	970	1808	4613	3412	792	680	979	2516
65 years and over.	6317	4232	3561	5685	9997	7242	3669	2356	4396	8950

XXIX. PERCENTAGE OF BLIND SELF-SUPPORTING ACCORDING TO AGE IN MINNESOTA

AGE	PER CENT OF TOTAL					
	MALE			FEMALE		
	<i>Wholly or Partly Self-Sup- porting</i>	<i>Wholly Self-Sup- porting</i>	<i>Partly Self-Sup- porting</i>	<i>Wholly or Partly Self-Sup- porting</i>	<i>Wholly Self-Sup- porting</i>	<i>Partly Self-Sup- porting</i>
Total.	48.0	30.8	17.2	36.3	25.9	10.4
Under 16.	8.0	5.1	2.9	8.5	3.5	5.0
16-20.	20.0	11.5	8.5	20.0	10.0	10.0
21-30.	76.4	43.1	33.3	40.4	21.4	19.0
31-40.	67.3	51.9	15.4	56.8	32.4	24.4
41-50.	76.9	56.9	20.0	60.6	54.6	6.0
51-60.	63.8	37.4	26.4	63.5	47.7	15.8
61-70.	64.4	30.1	34.3	61.3	47.3	14.0
71-80.	41.2	32.4	8.8	36.1	31.9	4.2
81-90.	51.5	36.3	15.2	100.0	100.0	....
90 and over.	60.0	50.0	10.0	0.0	0.0	0.0

BLINDNESS AND THE BLIND

XXX. PERCENTAGE DISTRIBUTION OF BLIND ACCORDING TO KIND OF TYPE READ

KIND OF TYPE READ	PER CENT DISTRIBUTION					
	1910			1920		
	Total	Male	Female	Total	Male	Female
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Reading one kind only.....	73.3	77.2	68.5	77.8	80.8	74.1
Reading more than one kind..	26.7	22.8	31.5	22.2	19.2	25.9
Reporting kinds read:						
New York point.....	57.2	56.8	57.8	43.8	44.0	43.6
Braille.....	39.0	37.5	40.7	53.1	51.7	54.7
American.....	28.1	28.2	28.0	20.5	19.9	21.3
English or European.....	4.7	4.1	5.6	3.4	3.3	3.6
Revised grade 1½.....	....	....	....	10.9	10.3	11.7
Kind not reported.....	6.1	5.3	7.2	18.2	18.2	18.1
Line type or letter.....	23.9	20.3	28.5	7.3	5.8	9.3
Moon type.....	11.1	10.6	11.7	11.6	11.0	12.3
Kind not reported.....	6.4	5.9	7.1	12.6	11.7	13.7

XXXI. PERCENTAGE DISTRIBUTION OF BLIND BY GEOGRAPHIC DIVISIONS ACCORDING TO KIND OF TYPE READ

<i>Kind of Type</i>	<i>United States</i>	<i>New England</i>	<i>Middle Atlantic</i>	<i>East North Central</i>	<i>West North Central</i>	<i>South Atlantic</i>	<i>East South Central</i>	<i>West South Central</i>	<i>Mountain</i>	<i>Pacific</i>
	PER CENT DISTRIBUTION BY KIND OF TYPE									
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reading one kind only.....	77.8	66.7	74.1	81.5	84.5	80.4	81.8	81.4	75.2	73.9
Reading more than one kind....	22.2	33.3	25.9	18.5	15.5	19.6	18.2	18.6	24.8	26.1
Reporting kinds read:										
New York point.....	43.8	6.9	39.2	43.6	56.8	70.0	52.5	68.8	39.3	29.2
Braille.....	53.1	83.5	52.8	58.5	44.1	23.9	45.0	27.6	66.8	70.5
American.....	20.5	38.4	20.6	22.2	16.2	2.8	16.2	5.2	30.3	34.3
English or European.....	3.4	5.6	3.4	3.5	3.9	1.7	2.7	1.2	2.6	5.0
Revised grade 1½.....	10.9	9.3	12.3	13.7	9.6	5.1	9.7	3.5	21.9	11.7
Kind not reported.....	18.2	30.3	16.5	19.0	14.5	14.4	16.4	17.7	11.9	19.5
Line type or letter.....	7.3	15.9	5.0	6.4	4.5	9.0	11.0	10.1	2.6	3.9
Moon type.....	11.6	17.2	24.3	5.6	2.0	6.0	1.6	0.8	8.4	23.6
Kind not reported.....	12.6	19.7	12.3	9.5	12.0	13.9	14.2	13.6	11.6	10.0
	PER CENT DISTRIBUTION BY GEOGRAPHIC DIVISIONS									
Total.....	100.0	10.4	24.5	24.2	11.1	9.6	5.6	6.2	3.2	5.4
Reading one kind only.....	100.0	8.9	23.3	25.3	12.0	9.9	5.9	6.5	3.1	5.1
Reading more than one kind....	100.0	15.6	28.5	20.2	7.7	8.4	4.6	5.2	3.5	6.3
Reporting kinds read:										
New York point.....	100.0	1.6	21.9	24.1	14.3	15.3	6.7	9.7	2.8	3.6
Braille.....	100.0	16.4	24.3	26.6	9.2	4.3	4.8	3.2	4.0	7.1
American.....	100.0	19.5	24.6	26.2	8.7	1.3	4.5	1.6	4.7	9.0
English or European.....	100.0	16.8	24.4	24.9	12.4	4.6	4.4	2.2	2.4	7.8
Revised grade 1½.....	100.0	8.8	27.5	30.4	9.7	4.4	5.0	2.0	6.4	5.8
Kind not reported.....	100.0	17.3	22.2	25.3	8.8	7.6	5.1	6.0	2.1	5.8
Line type or letter.....	100.0	22.6	16.8	21.1	6.8	11.8	8.4	8.4	1.1	2.9
Moon type.....	100.0	15.5	51.4	11.8	2.0	4.9	0.8	0.4	2.3	10.9
Kind not reported.....	100.0	16.3	24.0	18.3	10.6	10.6	6.3	6.7	2.9	4.3

XXXII. PERCENTAGE DISTRIBUTION OF BLIND BY RACE AND NATIVITY ACCORDING TO KIND OF TYPE READ

KIND OF TYPE READ	PER CENT DISTRIBUTION			
	WHITE			NEGRO
	<i>Total</i>	<i>Native</i>	<i>Foreign Born</i>	
Total.....	100.0	100.0	100.0	100.0
Reading one kind only.....	77.5	77.6	75.6	84.7
Reading more than one kind.....	22.5	22.4	24.4	15.3
Reporting kinds read:				
New York point.....	43.4	44.4	32.0	53.5
Braille.....	54.2	54.5	51.7	27.8
American.....	21.1	21.2	20.1	7.3
English or European.....	3.6	3.4	6.0	0.7
Revised grade 1½.....	11.1	11.4	8.2	5.9
Kind not reported.....	18.4	18.5	17.5	13.9
Line type or letter.....	7.2	7.3	6.3	9.8
Moon type.....	11.5	10.3	26.4	13.0
Kind not reported.....	12.5	12.3	14.7	15.0

XXXIII. PERCENTAGE DISTRIBUTION OF BLIND BY AGE ACCORDING TO KIND OF TYPE READ

KIND OF TYPE READ	PER CENT DISTRIBUTION							
	<i>Total</i>	<i>5 to 9 Years</i>	<i>10 to 14 Years</i>	<i>15 to 19 Years</i>	<i>20 to 24 Years</i>	<i>25 to 44 Years</i>	<i>45 to 64 Years</i>	<i>65 Years and Over</i>
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reading one kind only.....	77.8	96.7	89.2	84.0	79.2	73.3	69.8	78.6
Reading more than one kind.....	22.2	3.3	10.8	16.0	20.8	26.7	30.2	21.4
Reporting kinds read:								
New York point.....	43.8	16.5	32.1	46.3	53.2	54.1	44.3	24.3
Braille.....	53.1	77.2	71.2	60.0	61.3	54.6	39.7	29.6
American.....	20.5	11.1	22.2	27.3	29.9	23.6	14.1	9.3
English or European.....	3.4	2.2	1.6	1.2	3.2	4.6	4.4	3.7
Revised grade 1½.....	10.9	33.3	21.7	11.0	10.9	8.9	6.7	4.9
Kind not reported.....	18.2	30.7	25.6	20.4	17.4	17.5	14.4	11.7
Line type or letter.....	7.3	0.7	1.8	3.3	2.8	7.5	13.9	11.5
Moon type.....	11.6	...	0.4	0.7	2.0	6.7	21.5	47.0
Kind not reported.....	12.6	8.9	6.2	7.5	7.1	13.5	18.8	15.5

XXXIV. PERCENTAGE DISTRIBUTION OF BLIND BY AGE AT LOSS OF SIGHT ACCORDING TO KIND OF TYPE READ

KIND OF TYPE READ	PER CENT DISTRIBUTION											
	LESS THAN 20 YEARS OF AGE						20 YEARS OF AGE OR OVER					
	TOTAL	Total	Less than 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	Indefinite	Total	20 to 24 Years	25 to 44 Years	45 to 64 Years	65 Years or over
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reading one kind only.....	77.8	76.2	75.9	73.5	77.5	82.3	82.9	82.3	84.1	81.1	80.9	88.7
Reading more than one kind.....	22.2	23.8	24.1	26.5	22.5	17.7	17.1	17.7	15.9	18.9	19.1	11.3
Reporting kinds read:												
New York point.....	43.8	48.4	47.3	48.6	52.0	55.2	33.5	28.4	46.6	32.9	17.6	9.0
Braille.....	53.1	56.0	57.7	57.5	49.6	45.4	70.0	43.4	49.9	50.7	37.3	17.6
American.....	20.5	22.1	21.7	24.3	20.7	19.6	29.4	15.0	17.7	17.9	13.0	3.5
English or European.....	3.4	3.4	3.4	4.3	2.7	3.3	0.6	3.6	4.4	4.5	2.5	1.2
Revised grade 1½.....	10.9	11.9	13.2	10.1	9.3	6.8	21.8	8.1	8.2	8.5	8.9	3.9
Kind not reported.....	18.2	18.7	19.4	18.7	16.9	15.7	18.2	16.7	19.6	19.8	12.9	9.0
Line type or letter.....	7.3	9.1	9.7	10.1	8.4	4.0	4.7	1.5	1.3	2.2	0.9	1.2
Moon type.....	11.6	3.4	2.7	3.8	3.9	6.7	4.1	39.6	12.6	30.3	57.3	74.2
Kind not reported.....	12.6	13.5	13.3	15.4	14.1	11.0	9.4	9.0	7.7	8.4	9.9	11.3

XXXV. PERCENTAGE OF BLIND RECEIVING PUBLIC AID BY STATES

STATE	PER CENT OF TOTAL		
	Total	Male	Female
New England:			
Maine.....	46.2	48.4	43.3
New Hampshire.....	35.3	43.4	25.0
Vermont.....	11.8	....	....
Massachusetts.....	21.1	22.9	19.0
Rhode Island.....	2.6	....	....
Connecticut.....	9.5	9.7	9.2
Middle Atlantic:			
New York.....	12.5	14.2	10.5
New Jersey.....	4.1	5.0	3.0
Pennsylvania.....	5.8	7.0	4.1
East North Central:			
Ohio.....	48.5	51.2	45.0
Indiana.....	9.1	10.9	6.6
Illinois.....	39.4	42.1	35.8
Michigan.....	10.6	10.8	10.4
Wisconsin.....	41.9	43.3	39.7
West North Central:			
Minnesota.....	7.9	8.5	6.7
Iowa.....	40.9	43.3	37.6
Missouri.....	10.7	12.5	8.4
North Dakota.....	11.6	....	....
South Dakota.....	4.6	....	....
Nebraska.....	16.4	17.5	14.8
Kansas.....	16.5	17.6	14.7
South Atlantic:			
Delaware.....	5.7	....	....
Maryland.....	8.4	10.9	4.3
District of Columbia.....	3.6	2.5	....
Virginia.....	13.5	15.8	9.6
West Virginia.....	11.1	14.3	6.3
North Carolina.....	15.6	18.4	11.9
South Carolina.....	11.2	12.8	8.8
Georgia.....	20.3	23.4	15.5
Florida.....	13.3	15.3	10.4
East South Central:			
Kentucky.....	13.1	14.8	10.6
Tennessee.....	10.5	11.8	8.2
Alabama.....	9.9	10.8	8.6
Mississippi.....	11.2	12.4	9.0
West South Central:			
Arkansas.....	11.8	13.0	10.4
Louisiana.....	8.6	9.5	7.2
Oklahoma.....	11.5	11.5	11.4
Texas.....	11.4	11.8	10.8
Mountain:			
Montana.....	13.7	....	....
Idaho.....	12.6	....	....
Wyoming.....	....	....	....
Colorado.....	55.8	56.8	53.9
New Mexico.....	5.1	7.1	2.1
Arizona.....	....	....	....
Utah.....	10.9	....	....
Nevada.....	....	....	....
Pacific:			
Washington.....	6.9	10.2	2.0
Oregon.....	7.2	9.1	4.0
California.....	12.8	13.3	11.9

XXXVI. PERMANENT DISABILITY OF EYE EXPRESSED IN PERCENTAGE OF TOTAL DISABILITY

Visual Capacity	20/20	19/20	18/20	17/20	16/20	15/20	14/20	13/20	12/20	11/20	10/20	9/20	8/20	7/20	6/20	5/20	4/20	3/20	2/20	1/20	0/0
20/20.....	0	1	3	5	6	8	10	11	13	15	16	18	20	21	23	25	26	28	30	31	33
19/20.....	1	3	5	7	9	10	12	13	15	17	19	21	23	24	26	27	29	31	33	35	37
18/20.....	3	5	7	9	11	12	14	15	17	19	21	23	25	26	28	30	32	33	35	37	40
17/20.....	5	7	9	11	13	15	16	18	20	21	23	25	27	28	30	32	35	36	38	40	43
16/20.....	6	9	11	13	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46
15/20.....	8	10	12	15	16	18	20	22	24	26	28	30	32	34	36	38	41	43	45	47	49
14/20.....	10	12	14	16	18	20	22	24	26	28	30	32	35	37	39	41	44	46	48	50	54
13/20.....	11	13	15	18	20	22	24	27	29	31	33	35	38	40	42	44	47	49	51	53	57
12/20.....	13	15	17	20	22	24	26	29	31	34	36	38	41	43	46	48	50	53	55	57	60
11/20.....	15	17	19	21	24	26	28	31	34	36	38	41	43	46	48	50	53	56	57	60	63
10/20.....	16	19	21	23	26	28	30	32	35	38	40	43	46	48	50	53	56	58	60	63	66
9/20.....	18	21	23	25	28	30	32	35	38	40	43	46	49	52	54	56	59	61	64	67	70
8/20.....	20	23	25	27	30	32	35	38	41	43	46	49	52	55	57	60	62	65	68	71	73
7/20.....	21	24	26	28	32	34	37	40	43	46	48	52	55	57	59	62	65	67	70	73	77
6/20.....	23	26	28	30	34	36	39	42	46	48	50	54	57	59	62	66	68	71	74	77	80
5/20.....	25	27	30	32	36	38	41	44	48	50	53	56	60	62	65	68	71	74	77	80	83
4/20.....	26	29	32	35	38	41	44	47	50	53	56	59	62	65	68	71	75	78	81	84	87
3/20.....	28	31	33	36	40	43	46	49	53	55	58	61	65	67	71	74	78	81	84	87	90
2/20.....	30	33	35	38	42	45	48	51	55	57	60	64	68	70	74	77	81	84	87	90	94
1/20.....	31	35	37	40	44	47	50	53	57	60	63	67	71	73	77	80	84	87	90	94	97
0/0.....	33	37	40	43	46	49	54	57	60	63	66	70	73	77	80	83	87	90	94	97	100

APPENDIX B

TABLES WITH RESPECT TO SCHOOLS FOR BLIND

I. PUBLIC INSTITUTIONS

<i>School</i>	<i>Location</i>	<i>Date of Opening</i>	<i>Number of Pupils</i>
Alabama School for Blind.....	Talladega	1888	165
Alabama School for Negro Deaf and Blind.....	Talladega	1892	41
Arizona State School for Deaf and Blind.....	Tuscon	1912	17
Arkansas School for Blind.....	Little Rock	1860	148
California School for Blind.....	Berkeley	1860	116
Colorado School for Deaf and Blind.....	Colorado Springs	1883	72
Connecticut Institute for Blind.....	Hartford	1893	66
Florida School for Deaf and Blind.....	St. Augustine	1885	85
Georgia Academy for Blind.....	Macon	1851	106
Idaho School for Deaf and Blind.....	Gooding	1906	22
Illinois School for Blind.....	Jacksonville	1840	265
Indiana School for Blind.....	Indianapolis	1847	145
Iowa School for Blind.....	Vinton	1852	159
Kansas School for Blind.....	Kansas City	1867	85
Kentucky School for Blind.....	Louisville	1842	164
Louisiana School for Blind.....	Baton Rouge	1856	123
Maryland School for Blind.....	Overlea	1853	80
Maryland School for Colored Blind and Deaf....	Overlea	1872	28
Perkins Institution and Massachusetts School for Blind (Massachusetts).....	Watertown	1832	290
Michigan School for Blind.....	Lansing	1865	169
Minnesota School for Blind.....	Faribault	1863	113
Mississippi School for Blind.....	Jackson	1848	65
Piney Woods Country Life School (Colored)....	Piney Woods	1929	20
Missouri School for Blind.....	St. Louis	1851	115
Montana School for Deaf and Blind.....	Boulder	1893	21
Nebraska School for Blind.....	Nebraska City	1875	52
New Mexico School for Blind.....	Alamogordo	1903	109
New York Institute for Education of Blind.....	New York City	1832	166
New York State School for Blind.....	Batavia	1868	154
North Carolina State School for Blind and Deaf	Raleigh	1845	282
North Dakota School for Blind.....	Bathgate	1908	36
Ohio State School for Blind.....	Columbus	1837	252
Oklahoma School for Blind.....	Muskogee	1897	152
Oklahoma State Institute for Deaf, Blind, and Orphans (Colored).....	Taft	1909	9
Oregon State School for Blind.....	Salem	1873	46
Pennsylvania Institution for Instruction of Blind	Philadelphia	1833	282
Western Pennsylvania School for Blind.....	Pittsburgh	1890	170
South Carolina School for Deaf and Blind.....	Cedar Spring	1855	150
South Dakota State School for Blind.....	Gary	1899	51
Tennessee School for Blind.....	Nashville	1843	241
Texas School for Blind.....	Austin	1856	232
Texas Deaf, Dumb, and Blind Institute for Colored Youths.....	Austin	1887	117
Utah School for Deaf and Blind.....	Ogden	1896	29
Virginia School for Deaf and Blind.....	Staunton	1839	91

BLINDNESS AND THE BLIND

I. PUBLIC INSTITUTIONS—*Continued*

<i>School</i>	<i>Location</i>	<i>Date of Opening</i>	<i>Number of Pupils</i>
Virginia State School for Colored Deaf and Blind Children.....	Newport News	1910	28
Washington State School for Blind.....	Vancouver	1886	101
West Virginia Schools for Deaf and Blind.....	Romney	1878	118
West Virginia School for Colored Deaf and Blind.....	Institute	1926	18
Wisconsin School for Blind.....	Janesville	1849	166

II. PUBLIC DAY SCHOOLS

<i>State</i>	<i>City</i>	<i>Date of Opening</i>	<i>Number of Pupils</i>
California.....	{ Long Beach	1930	2
	{ Los Angeles	1917	54
Georgia.....	Atlanta	1922	6
Illinois.....	Chicago	1900	85
Louisiana.....	New Orleans	1917	10
Michigan.....	{ Detroit	1912	53
	{ Grand Rapids	1928	10
	{ Duluth	1919	2
Minnesota.....	Minneapolis	1919	44
	St. Cloud	1928	6
	St. Paul	1919	2
	Elizabeth	1930	6
New Jersey.....	Jersey City	1911	12
	Newark	1910	16
	Paterson	1923	15
New York.....	Buffalo	1918	12
	New York City	1909	113
	Cincinnati	1905	12
Ohio.....	Cleveland	1909	34
	Toledo	1915	9
	Youngstown	1920	11
Pennsylvania.....	Johnstown	1925	18
Washington.....	Seattle	1920	3
Wisconsin.....	Milwaukee	1907	10

III. PRIVATE INSTITUTIONS

(Not including institutions principally for very young blind)

<i>State</i>	<i>School</i>	<i>Date of Opening</i>	<i>Number of Pupils</i>
New Jersey....	Jersey City—St. Joseph's School for Blind	1890	55
New York.....	{ New York City (Bronx)—Catholic Institute for Blind	1909	28
	{ New York City (Staten Island)—St. Joseph's Home (Asylum) for Blind	1894	25
Pennsylvania...	{ King of Prussia—Royer-Greaves School for Blind	1921	21
	{ Lansdale—St. Mary's Institute for Blind	1922	20

APPENDIX C

TABLES WITH RESPECT TO HOMES FOR BLIND

I. HOMES FOR ADULTS

<i>Name</i>	<i>Location</i>	<i>Date of Opening</i>	<i>Number of Inmates</i>
Hurt Home for Blind.....	Washington, District of Columbia	1897	32
Iowa Home for Sightless Women ...	Des Moines, Iowa	1915	6
Annetta P. Rogers House.....	Boston, Massachusetts	1916	9
Fisher Home.....	Boston, Massachusetts	1926	10
James A. Woolson House.....	Cambridge, Massachusetts	1910	8
James A. Partridge Memorial Home (blind women).....	Worcester, Massachusetts	1905	13
Whitcomb Hall (blind men).....	Worcester, Massachusetts	1920	15
Hale Home for Blind Women.....	Kansas City, Missouri	1917	15
Blind Girls' Home.....	St. Louis, Missouri	1868	37
St. Joseph's Home for Blind.....	Jersey City, New Jersey	1890	118
Albany Home for Blind Women.....	Albany, New York	1929	7
Catholic Center for Blind.....	New York City (Manhattan), New York	1914	40
Friendly Lodge.....	New York City (Brooklyn), New York	1926	16
Home for Blind of Church Char- ity Foundation.....	New York City (Brooklyn), New York	1895	16
Home of New York Society for Re- lief of Destitute Blind.....	New York City (Bronx), New York	1868	100
Home of Queensborough Workers for Blind.....	New York City (Queensbor- ough), New York	1923	40
St. Joseph's Home for Blind.....	New York City (Staten Is- land), New York	1895	25
Home of New York Guild of Jewish Blind.....	Yonkers, New York	1921	20
Clovernook Home for Blind.....	Mt. Healthy (Cincinnati), Ohio	1903	40
Chapin Memorial Home for Aged Blind.....	Philadelphia, Pennsylvania	1906	26
Pennsylvania Industrial Home for Blind Women.....	Philadelphia, Pennsylvania	1868	50
Torrance Home for Blind.....	Pittsburgh, Pennsylvania	1930	10
Home for Blind Girls.....	Nashville, Tennessee	1901	9
Home for Blind Girls (State Com- mission).....	Nashville, Tennessee	1922	18

BLINDNESS AND THE BLIND

II. HOMES FOR CHILDREN

<i>Name</i>	<i>Location</i>	<i>Date of Opening</i>	<i>Number of Inmates</i>
Connecticut Institute for Blind—Nursery for Blind.....	Farmington, Connecticut	1893	21
Boston Nursery for Blind Babies.....	Boston, Massachusetts	1901	21
Arthur Sunshine Home and Kindergarten for Blind Babies.....	Summit, New Jersey	1910	53
Brooklyn Home for Blind, Crippled, and Defective Children	New York City (Brooklyn), New York	1907	13
Dyker Heights Home for Blind Children	New York City (Brooklyn), New York	1904	34
Home of New York Guild of Jewish Blind	Yonkers, New York	1918	10

APPENDIX D

TABLE WITH RESPECT TO INDUSTRIAL ESTABLISHMENTS
FOR BLIND

<i>Location</i>	<i>Name</i>	<i>Date of Opening</i>	<i>Number Employed</i>
Alabama			
Birmingham.....	Workshop	1916	38
Mobile.....	Workshop	1926	20
California			
Los Angeles.....	Industrial Workshop	1927	50
Oakland.....	Industrial Home	1885	131
San Francisco.....	"Blindcraft Workshop"	1912	70
Colorado			
Denver.....	Workshop (Commission)	1907	31
Denver.....	Workshop (Association)	1913	14
Connecticut, Weathersfield	Connecticut Institute for Blind—Trades Department	1893	44
Delaware, Wilmington...	Workshop	1908	13
District of Columbia, Washington	Columbia Polytechnic Institute	1900	18
Georgia			
Atlanta.....	Workshop	1929	20
Augusta.....	Workshop	1929	25
Savannah.....	Training School	1931	15
Illinois			
Chicago.....	Lighthouse	1916	79
Chicago.....	Illinois Industrial Home	1887	93
Chicago.....	Workshop	1928	10
Indiana, Indianapolis....	Workshop of Board of Industrial Aid	1899	44
Kansas, Kansas City....	Workshop for Blind (School)	1922	40
Kentucky			
Anchorage.....	Farm for Blind	1929	8
Louisville.....	Kentucky Workshop	1913	44
Louisiana			
New Orleans.....	Lighthouse	1917	53
Shreveport.....	Workshop	1927	12
Maine, Portland.....	Maine Institution	1909	41
Maryland, Baltimore....	Maryland Workshop	1908	100
Massachusetts			
Boston.....	Blind Handicraft Shop	1926	15
Boston.....	Perkins Institution Workshop	1850	20
Cambridge.....	Woolson House Industries	1910	51
Cambridge.....	Workshop	1904	14
Fall River.....	Workshop	1909	11
Lowell.....	Workshop	1908	9
Pittsfield.....	Workshop	1905	20
Worcester.....	Workshop	1908	9
Michigan			
Grand Rapids.....	Workshop	1922	15
Saginaw.....	Michigan Employment Institution	1903	79

TABLE WITH RESPECT TO INDUSTRIAL ESTABLISHMENTS
FOR BLIND—*Continued*

<i>Location</i>	<i>Name</i>	<i>Date of Opening</i>	<i>Number Employed</i>
Minnesota			
Duluth.....	Lighthouse	1919	16
Minneapolis.....	Workshop	1914	20
St. Paul.....	Industrial Home	1920	9
St. Paul.....	Workshop	1918	7
Missouri			
Jefferson City.....	Workshop	1920	10
Joplin.....	Workshop	1925	20
Kansas City.....	Workshop	1918	65
Kansas City.....	Workshop	1925	15
Springfield.....	Workshop	1931	12
St. Joseph.....	Workshop	1922	20
St. Louis.....	Workshop	1913	43
St. Louis.....	Workshop	1916	15
New Hampshire, Concord	Workshop	1917	13
New York			
Albany.....	Workshop	1913	78
Binghamton.....	Workshop	1926	10
Buffalo.....	Workshop	1906	29
Elmira.....	Workshop	1930	10
Glens Falls.....	Workshop	1914	9
Jamestown.....	Workshop	1921	15
New York City.....	Exchange (Brooklyn)	1912	49
New York City.....	Marie Bloede Workshop (Brooklyn)	1914	52
New York City.....	Workshop of Blind Industrial Workers (Brooklyn)	1921	15
New York City.....	Workshop (Brooklyn)	1923	13
New York City.....	Industrial Home (Brooklyn)	1893	126
New York City.....	Bourne Workshop (Men) (Manhattan)	1906	213
New York City.....	Community Center of New York Guild of Jewish Blind (Manhattan)	1914	35
Rochester.....	Workshop	1916	26
Syracuse.....	Workshop	1917	32
Utica.....	Workshop	1929	10
Watertown.....	Workshop	1919	8
Ohio			
Cincinnati.....	Workshop	1912	30
Cleveland.....	Workshop	1906	52
Columbus.....	Workshop	1912	30
Mt. Healthy (Cincinnati).....	Clovernook Home	1903	30
Toledo.....	Workshop	1930	8
Youngstown.....	Workshop	1920	24
Oregon, Portland.....	Oregon Employment Institution	1913	60
Pennsylvania			
Altoona.....	Workshop	1927	21
Beaver Falls.....	Workshop	1927	11
Harrisburg.....	Workshop	1926	11
Johnstown.....	Workshop	1927	10
Lancaster.....	Workshop	1927	8
Philadelphia.....	Pennsylvania Working Home (Men)	1874	226
Pittsburgh.....	Workshop	1911	189
Reading.....	Workshop	1927	29
Scranton.....	Workshop	1920	14
Wilkes-Barre.....	Workshop	1920	23

TABLE WITH RESPECT TO INDUSTRIAL ESTABLISHMENTS
FOR BLIND—*Continued*

<i>Location</i>	<i>Name</i>	<i>Date of Opening</i>	<i>Number Employed</i>
Rhode Island, Providence	Workshop	1922	15
South Carolina, Columbia	Workshop	1920	28
Tennessee, Nashville.....	Workshop	1918	111
Texas			
Dallas.....	Lighthouse	1929	30
Ft. Worth.....	Industrial Shop	1931	15
Houston.....	Workshop	1927	15
Utah, Salt Lake City.....	Workshop	1909	15
Virginia			
Charlottesville.....	Workshop and Training School	1922	15
Roanoke.....	Workshop	1926	9
Washington, Seattle.....	Lighthouse	1916	18
Wisconsin, Milwaukee....	Wisconsin Workshop	1903	35

APPENDIX E

ILLUSTRATION OF ALPHABETS IN RAISED PRINT IN USE BY BLIND

I. Line Type

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
1	2	3	4	5	6	7	8	9	0																

II. Moon Type

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Λ	ℓ	⊂	⊃	⊔	⊖	⊗	⊙	|	J	<	⊔	⊔	⊔
O	P	Q	R	S	T	U	V	W	X	Y	Z	&	?
○	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒
1	2	3	4	5	6	7	8	9	0				
	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒

III. New York Point

a	b	c	d	e	f	g	h	i	j	k	l	m
••	•••	••	••	•	•••	•••	•••	•	••	•••	••	••
n	o	p	q	r	s	t	u	v	w	x	y	z
••	•	••	•••	•••	•	••	•••	••	••	•••	••	•••
1	2	3	4	5	6	7	8	9	0			
••	••	••	••	••	••	•	••	••	•			
,	;	:	•	?	!	—	(	)	'	—	"	"
•	•	••	••	••	••	•••	••	••	•••	•••	••	••

[illegible]

VI. Standard English Braille
(With part-words, whole-words, etc., slightly modified)

ALPHABET	a	b	c	d	e	f	g	h	i	j
NUMERALS	1	2	3	4	5	6	7	8	9	0
WHOLE-WORD	a	but	can	do	every	from	go	have	I	just
	••	••	••	••	••	••	••	••	••	••
	••	••	••	••	••	••	••	••	••	••
	••	••	••	••	••	••	••	••	••	••
ALPHABET	k	l	m	n	o	p	q	r	s	t
WHOLE-WORD	knowledge	like	more	not	O	people	quite	rather	so	that
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	••	••	••	••	••	••	••	••	••	••
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